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STATE OF COLORADO

## BUREAU OF MINES

State Capitol, Denver

EDWARD P. ARTHUR, *Commissioner of Mines*

# ANNUAL REPORT

for the Year 1939



THE BRADFORD ROBINSON FTG. CO., DENVER



STATE OF COLORADO

BUREAU OF MINES

State Capitol, Denver

EDWARD P. ARTHUR, *Commissioner of Mines*

ANNUAL REPORT

for the Year 1939



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## LETTER OF TRANSMITTAL

To His Excellency,  
THE HONORABLE RALPH L. CARR,  
Governor of Colorado.

Sir: In compliance with Chapter 110, Section 285 of the Colorado Statutes Annotated 1935, I have the honor to transmit herewith the Annual Report of the State Bureau of Mines for the year 1939.

Respectfully submitted,

EDWARD P. ARTHUR,  
Commissioner of Mines.

State Capitol,  
Denver, Colorado,  
June 5, 1940.

# FINANCIAL STATEMENT

1937-1939

Appropriation for the fiscal years 1937-1939:

Salary, Commissioner.....	\$ 6,000.00	
Salaries, 4 Inspectors.....	20,000.00	
Salary, Clerk and Curator.....	3,600.00	
Salary, Stenographer and Assistant Clerk .....	3,000.00	
Salary, Assistant Curator of Mineral Exhibits .....	2,400.00	
Salary, Stenographer-Clerk (Half Time) .....	1,200.00	
	<hr/>	\$36,200.00
Traveling Expenses, Commissioner and Inspectors .....		12,000.00
Incidental Fund.....		1,400.00
		<hr/>
		\$49,600.00

## DISBURSEMENTS

Salary—

Commissioner .....	\$ 6,000.00	
Inspector, District No. 1.....	4,999.92	
Inspector, District No. 2.....	4,999.92	
Inspector, District No. 3.....	4,999.92	
Inspector, District No. 4.....	4,999.92	
Clerk and Curator.....	3,600.00	
Stenographer and Assistant Clerk.....	3,000.00	
Assistant Curator of Mineral Exhibits .....	2,400.00	
Stenographer-Clerk (Half Time).....	1,200.00	
	<hr/>	\$36,199.68
Traveling Expenses, Commissioner and Inspectors .....		11,235.75
Incidental Expenses.....		1,490.30
Unexpended Balance.....		674.27
		<hr/>
		\$49,600.00

**PERSONNEL OF THE BUREAU OF MINES OF THE STATE  
OF COLORADO**

EDWARD P. ARTHUR, Commissioner of Mines.....Denver  
GEORGE BECKER, Inspector, District No. 1.....Denver  
HERRICK McLEOD, Inspector, District No. 2....Colorado Springs  
R. J. MURRAY, Inspector, District No. 3.....Salida  
D. C. McNAUGHTON, Inspector, District No. 4.....Silverton  
ETHEL F. McCARTHY, Chief Clerk.....Denver  
BETTY PERMENTER, Stenographer and Clerk.....Denver  
MARGARET F. SMITH, Part Time Stenographer and  
Clerk .....Denver

## DISTRICTS OF INSPECTION

DISTRICT NO. 1—Adams, Arapahoe, Boulder, Clear Creek, Denver, Gilpin, Grand, Jackson, Jefferson, Larimer, Logan, Moffat, Morgan, Phillips, Routt, Sedgwick, Summit, Washington, Weld and Yuma counties, and that part of Park county lying north and west of a line drawn from the southwest corner of Jefferson county to the southwest corner of Park county.

DISTRICT NO. 2—Baca, Bent, Cheyenne, Crowley, Custer, Douglas, Elbert, El Paso, Fremont, Huerfano, Kiowa, Kit Carson, Las Animas, Lincoln, Otero, Prowers, Pueblo and Teller counties and the part of Park county lying south and east of a line drawn from the southwest corner of Jefferson county to the southwest corner of Park county.

DISTRICT NO. 3—Alamosa, Chaffee, Conejos, Costilla, Eagle, Garfield, Lake, Mineral, Pitkin, Rio Blanco and Rio Grande counties, and that portion of Saguache county lying south and east of the main Continental Divide, and the extreme northwest part of Gunnison county, lying north of the 39th degree of latitude.

DISTRICT NO. 4—Archuleta, Delta, Dolores, Hinsdale, La Plata, Mesa, Montezuma, Montrose, Ouray, San Juan and San Miguel counties and all of Gunnison county, except the extreme northwest corner lying north of the 39th degree of latitude, also that part of Saguache county lying north and west of the main Continental Divide.

The description of these districts is the same as designated by Commissioner Joyce on August 2, 1928, and will remain the same until altered by the legislature or the Commissioner.



## INTRODUCTION

The activities of the Bureau of Mines during 1939 were confined to the usual routine, no funds for any special work being provided.

The four inspectors visited practically all of the operating metal mines, quarries, mills, smelters, railroad tunnels and highway and other excavations at least once during the year. Most of the larger operations were inspected more than once. The object of these inspections is to eliminate, as far as possible, unsafe conditions and practices in the operation of such properties. In general, this work meets with the lively cooperation of the operators.

The Commissioner and Inspectors are anxious to help the mining industry in every legitimate manner and wish to be called upon whenever their services can be used.

Inquiries regarding the mines and mineral resources of the state and questions regarding the demand and market for less common mineral products are constantly coming into the Bureau. An earnest endeavor is made to furnish the information desired. Helpful cooperation is often received from the Colorado Mining Association, the United States Bureau of Mines, the United States Geological Survey, and the Colorado Geological Survey Board.

The Commissioner takes this opportunity of expressing his appreciation of the loyal and efficient services that have been rendered by the entire personnel of the Bureau during the past year.

The Commissioner also wishes to express his sincere thanks to The Hon. John W. Finch for all the help extended and regrets exceedingly that he found it necessary to resign from the head of the U. S. Bureau of Mines.

## MINING IN COLORADO IN 1939

By **Edward P. Arthur**  
(Commissioner of Mines)

Mining in Colorado in 1939 was much the same as it has been for the past few years, with the exception of a few outstanding events in different parts of the state. As a whole, the total metal and mineral output was much the same as in 1938. Several of the metals and minerals showed a decrease while others showed a gain.

Gold production registered a small decrease due principally to a lower average grade of ore and the cessation of pumping on some of the lower levels in the Cripple Creek district, awaiting the completion of the new drainage tunnel.

Silver production increased a little in ounces with a better price during the last half of the year.

Copper shows a slight decrease in pounds and value.

Lead also decreased in production.

Zinc showed a marked decrease in production over 1939, being only about 40% of the previous year.

Molybdenum ore showed a decrease due to a heavy drawing on the stock of stored ore already mined.

Tungsten production increased in 1939 with a little increase in price and a more encouraging outlook.

Vanadium production increased substantially with a better price in the latter part of the year.

Manganese production was rather limited, with a better outlook for 1940.

Nonmetallies showed a loss from 1938 but the prospects for 1940 are good.

The production of the principal minerals in 1939 is taken up in more detail as follows:

### Gold

Colorado produced 366,852 ounces of fine gold in 1939 as against 367,468 ounces in 1938, being a decrease of 616 ounces. The value of the gold in 1939 was \$12,839,820 while the value for 1938 was \$12,861,380, being \$21,560 less than the previous year.

The Cripple Creek District (Teller county) as usual was the largest producer and is credited with 134,003 ounces or about 36.5% of the total. Park county ranked second and Clear Creek county third. Cripple Creek showed a small reduction in output, due principally to cessation of pumping. Boulder county had the largest number of individual producing properties, Clear Creek county second and Teller third. The price paid for the gold at the mint during the year was \$35.00 per ounce. The placer production in 1939 was about the same as for 1938.

### Silver

The silver output for 1939 was 8,496,488 ounces while that of 1938 was 7,932,095 ounces. The value of the silver in 1939

was \$5,767,313 and that of 1938 was \$5,127,819. The price paid in 1939 averaged 67.88 cents, while the 1938 price was 64.65 cents. This was due to the price in the latter part of 1939 being 71 cents per ounce.

Eagle county ranked first in the production of silver, producing about 75% of the entire state. The Empire Zinc Company furnished practically all of the silver output of the county. The second county in silver production was Mineral, with San Miguel third.

### Copper

Colorado copper production in 1939 was 26,430,000 pounds, being about 2,000,000 pounds less than in 1938. The price last year was slightly higher than in 1938, which brought the value to very nearly the same. Eagle county was the banner copper producer and accounted for about 90% of the state output. San Juan was second and Ouray county third. The Eagle county production was made by the Empire Zinc Company.

### Lead

Lead production in the state for 1939 showed a decrease over 1938 of about 2,500,000 pounds. The value of the lead for 1939 was \$772,868, and that for 1938 was \$869,860, the price being about the same each year. San Miguel was the main producer of this metal, Eagle county second and Lake county third.

### Zinc

Zinc production fell off heavily in 1939, being only about 40% of the 1938 production. The amount produced was 3,660,000 pounds showing a value of \$190,320. The price in 1939 was a little higher than in 1938. Dolores county led the state, San Juan was second and Lake third.

In the production of the five metals, gold, silver, copper, lead and zinc, the total output for the state in 1939 was a little ahead of 1938. The 1939 production was \$22,319,041, while that for 1938 was \$22,073,663.

In addition to the five metals, Colorado has of recent years made quite a record in the production of steel hardening minerals, molybdenum, vanadium, tungsten and manganese. The production of these minerals has become a very important part of the mining industry and probably employed about 1,500 men during the year. Should the European nations continue at war during 1940 it will probably mean a large increase in the production of these minerals. Tungsten has been mined in Boulder county for many years and manganese in several parts of the state, especially as a by-product.

### Molybdenum

Molybdenum ore production was curtailed to a considerable extent in 1939 over that of the preceding year. All of this ore was taken from the properties of the Climax Molybdenum Company in Lake county, not far from Leadville. The 1939 produc-

tion was 3,430,952 tons of crude ore which gave 20,485 tons of concentrates after being treated at the mill. The 1938 tonnage of crude was 4,344,734 tons and 27,591 tons of concentrates. The reduction in the amount of ore produced in 1939 was due principally to extensive using of stored ore already mined. The Climax Molybdenum Company property is the only one that produces this kind of ore in the state and is the largest mine of its kind in the world. The ore, after concentrating, is in the form of molybdenum sulphide, or  $\text{MoS}_2$ . No figures as to the selling price of the concentrates are obtainable.

### Vanadium

The production of this mineral shows some increase over that of 1938. The principal operations are in the western part of Montrose county and are carried on by the United States Vanadium Corporation, with a mill at Uravan in the same county. The number of tons of crude ore in 1939 is given as 86,861 and that for 1938 as 72,827. All of the ore milled is produced in Colorado.

The North Continent Company also operated a small mill and mine in San Miguel county during the year. Some small mines are also producing a little vanadium ore some of which is taken to Utah for reduction. In the latter part of the year the United States Vanadium Corporation commenced building an addition to its mill for the purpose of saving the uranium salts. The vanadium concentrates are sold on the basis of the amount of vanadium pentoxide ( $\text{V}_2\text{O}_5$ ) they contain. No figures as to the price were given though it is understood that the price, especially during the latter part of the year, was higher than in 1938.

The total production for 1939 is given as approximately 93,000 tons.

### Tungsten

The tungsten production for 1939 increased about 12% over that of 1938 with a little better price during the latter part of the year. Boulder county is the only one in the state that produces tungsten in an appreciable quantity.

### Manganese

The manganese production in the state was not large during 1939. Actual figures on the production of this mineral are hard to get, only one mine reporting the amount produced during the year. This was in Lake county and the amount produced was 8,025 tons. Several attempts were made in the latter part of the year to check up on manganese deposits for the purpose of getting the United States government to investigate them under the head of "Strategic Minerals" but on account of an accident, the Commissioner was forced to give it up. This investigation will be resumed in 1940.

### Barite

A small amount of barite was also produced during the year.



In addition to the metal and mineral output the state produces a very considerable quantity of what are known as non-metallics. This class takes in the following:

Marble, building stone, limestone, clays (fire—as well as others), feldspar, bentonite, fluorspar, gypsum, sandstone, vermiculite, mica, beryl and others, as well as a considerable amount of sand and gravel. The nonmetallic output, especially feldspar, was lower than in 1938. About a year ago a substance known as syenite began coming from Canada for glass making but this has not proven as good as first thought and there is a tendency to return to feldspar. The 1940 outlook for nonmetallies is good.

A report on the mining activities of Colorado for 1939 would not be complete without mention of the commencement of the new drainage tunnel for the Cripple Creek district. A number of years ago the Roosevelt drainage tunnel was built, which drained the district at considerable depth but of late a number of the ore shoots were found to extend below this level and pumping was necessary. This proved quite costly and it was decided to construct another drainage tunnel to take the place of the pumping and to permit development on the lower levels of the mines.

The Golden Cycle Corporation which treats practically all of the ore from the Cripple Creek district at its mill in Colorado Springs, took up the matter and in July, 1939, the new tunnel, known as the Carlton tunnel, was commenced. This tunnel has its portal on Four Mile creek about 9 miles southwest of the town of Cripple Creek, at an elevation of 6,893 feet above sea level. This new tunnel will be 1,100 feet lower than the level of the Roosevelt tunnel and will drain the district to that much greater depth. After getting well started, the tunnel was pushed along at remarkable speed and had reached 7,309 feet by the end of the year. The work is being done by day's pay with a bonus for fast work. The ground is hard but the cost so far has been very reasonable. The length of the tunnel is given as 32,000 feet and the cost is estimated at a little over \$1,000,000, depending of course on the character of ground encountered and the amount of water found. The cost of this tunnel is being borne entirely by the Golden Cycle Corporation and speaks very highly for the optimism and energy of this organization. It is estimated that the bore will be completed about the middle of 1941.

The number of men engaged in the metal mining industry in Colorado in 1939 is given as 11,000, including underground, surface, mills, and all lines identified with mining. This also includes all quarries. The number of working lode mines, upon which reports were filed in the State Bureau of Mines in 1939, was 635. A number of other properties also made production in a small way. In addition to guarding the safety of all men in mining pursuits, the State Bureau of Mines has jurisdiction of men working in all excavations showing any depth, especially where powder is used.

This includes road work, water works, railroad work, dams and all construction of this nature.

Probably the principal reason for mining being less active in Colorado during 1939 was the scarcity of money for development purposes. A number of mines that began operating a few years ago have found the capital on hand insufficient to thoroughly develop the property. The difficulty in obtaining more capital has curtailed work and production. Among the reasons for making "mining money" hard to get are the following:

- Uncertainty as to what the National Government may do in a financial way.

- Increasing taxes, both national, state and county.

- The fact that an election year was approaching.

- The difficulty of satisfying the requirements of the Securities and Exchange Commission.

- High cost of compensation insurance.

- The war situation in Europe unsettling financial conditions and cutting off almost entirely any foreign money for mining.

In addition to the difficulty of raising capital for mining, several economic conditions had a tendency to curtail work and production. Among these are the following:

- The difficulty of selling minerals in Europe, especially those connected with steel manufacture.

- The low price of base metals and the uncertainty of what the price would be.

- The use of stored ore instead of newly mined ore.

- The decision to put through a new drainage tunnel for the Cripple Creek district causing all pumping to cease.

While the general metallic and mineral output for 1939 was a little below that of 1938, the outlook for 1940 appears to be good and it is confidently expected that it will show a considerable increase over 1939.

An attempt was made by this Bureau during the latter part of the year to assist the Federal government in finding workable bodies of the strategic minerals but little headway was made. This effort will be continued during the coming year.

Every effort is being made to reduce as far as possible all accidents, both fatal and otherwise, to the employes in all mining lines.

The Commissioner and clerks have made every effort to get the best possible figures on the yearly production of the various metals and minerals produced and the number of men employed. We wish to thank the operators and employes for their help. The only way to improve mining is for all to work together. We realize that there are many men in this state who know and feel that when mining is good, the state is prosperous, so let us all do what we can to make 1940 a banner year.

The office regrets very much that, owing to lack of money, it was impossible to publish the 1938 report as it has made a serious break in the official reports of this Bureau.

**TABLE I**  
**PRODUCTION OF THE PRINCIPAL METALS IN COLORADO DURING THE YEARS 1938 AND 1939**

County	GOLD <sup>1</sup>				SILVER <sup>2</sup>				COPPER				LEAD				ZINC				1938	1939	Plus Minus	Increase or Decrease in Value	County
	1938	Value	1939	Value	1938	Value	1939	Value	1938	Value	1939	Value	1938	Value	1939	Value	1938	Value	1939	Value					
Adams	91.80	\$ 3,213	317	\$ 11,095	14	\$ 9	53	\$ 36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$ 3,222	\$ 11,131	+	7,909	Adams	
Arapahoe	20.00	700	13	455	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	701	155	—	246	Arapahoe	
Boulder	23,049.40	806,729	28,934	1,012,690	38,763	25,059	40,045	27,182	85,000	\$ 8,330	162,000	\$ 16,848	164,000	\$ 7,544	83,000	\$ 3,901	.....	.....	.....	847,662	1,060,621	+	212,959	Boulder	
Chaffee	472.40	16,534	699	24,465	4,834	3,125	3,991	2,709	4,400	431	4,500	468	212,000	9,752	85,000	3,995	48,000	\$ 2,304	.....	32,146	31,637	—	509	Chaffee	
Clear Creek	33,328.40	1,166,494	34,930	1,222,550	130,134	94,127	113,174	76,921	422,000	41,454	226,000	23,504	655,000	31,510	910,000	42,770	30,000	1,440	.....	1,325,025	1,365,645	+	40,620	Clear Creek	
Conejos	12.60	441	.....	.....	916	592	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,033	.....	—	1,033	Conejos	
Costilla	13.80	443	19	665	3	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	485	666	+	181	Costilla	
Custer	145.00	5,075	114	4,165	2,772	1,792	2,690	1,826	.....	.....	1,800	187	24,000	1,104	23,000	1,081	.....	.....	.....	7,971	7,239	—	712	Custer	
Denver	7.10	259	9	315	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	254	315	+	56	Denver	
Dolores	53.80	2,058	123	4,305	4,927	3,155	41,356	28,072	3,100	333	129,000	13,416	57,000	2,622	1,504,000	70,688	60,000	2,850	1,734,000	\$ 90,168	11,078	206,449	+	195,571	Dolores
Douglas	41.20	1,442	80	2,800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,142	2,800	+	1,358	Douglas	
Eagle	17,445.20	610,582	22,949	803,215	5,307,342	3,431,009	6,071,024	4,122,974	24,026,000	2,354,548	23,842,000	2,479,568	1,865,000	85,790	2,274,000	106,878	.....	.....	.....	6,481,929	7,512,635	+	1,030,706	Eagle	
Elbert	17.10	609	23	805	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	609	805	+	194	Elbert	
Fremont	10.20	357	4	140	35	23	.....	.....	9,400	921	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,301	140	—	1,161	Fremont	
Garfield	167.80	5,523	322	11,270	68	44	159	108	100	10	600	62	.....	.....	.....	.....	.....	.....	.....	5,577	11,140	+	5,863	Garfield	
Gilpin	14,165.40	495,789	10,894	381,290	34,896	22,559	51,209	31,760	23,000	2,251	108,000	11,232	101,000	4,616	188,000	5,836	.....	.....	.....	525,248	436,118	—	89,130	Gilpin	
Grand	2.00	70	6	210	.....	.....	1,102	748	.....	.....	.....	.....	.....	.....	3,000	141	.....	.....	.....	70	1,099	+	1,029	Grand	
Gunnison	828.80	29,008	1,908	66,780	4,930	3,187	4,315	2,929	100	10	19,000	1,976	19,000	874	17,000	799	29,000	1,392	4,000	312	34,471	72,796	+	38,325	Gunnison
Hinsdale	27.40	959	54	1,960	5,196	3,553	2,649	1,798	6,500	437	3,000	312	141,000	6,486	62,000	2,914	6,000	288	4,900	11,923	7,192	—	4,731	Hinsdale	
Jackson	1.70	42	2	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42	70	+	28	Jackson	
Jefferson	71.80	2,513	164	5,390	14	9	31	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,522	5,411	+	2,889	Jefferson	
Lake	11,993.00	419,755	9,987	349,545	105,461	48,306	131,514	89,270	57,000	5,586	12,000	1,248	2,449,000	112,454	2,208,000	103,776	193,000	9,264	351,900	18,252	615,665	562,091	—	53,474	Lake
La Plata	229.60	8,036	674	23,590	1,935	1,261	5,999	4,072	100	10	.....	.....	1,900	87	4,600	216	.....	.....	.....	9,384	27,878	+	18,494	La Plata	
Larimer	22.20	777	.....	.....	34	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	799	.....	—	799	Larimer	
Mineral	187.20	6,552	709	21,815	457,595	295,819	596,858	405,140	.....	.....	1,300	135	241,000	11,056	718,000	33,746	.....	.....	.....	313,457	463,836	+	150,379	Mineral	
Moffat	640.60	22,421	149	5,215	31	20	9	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22,411	5,221	—	17,220	Moffat	
Montezuma	1,891.60	65,206	943	33,005	3,595	2,324	1,102	748	3,000	294	500	52	.....	100	5	.....	.....	.....	.....	68,829	33,805	—	35,024	Montezuma	
Montrose	67.60	2,366	113	3,955	568	347	103	70	13,600	1,333	15,000	1,560	.....	.....	.....	.....	.....	.....	.....	4,066	5,585	+	1,519	Montrose	
Ouray	12,760.60	416,621	12,586	440,510	213,382	137,944	158,798	107,790	723,500	70,903	358,400	37,274	852,000	39,192	654,400	30,757	.....	.....	13,000	694,660	617,007	—	77,653	Ouray	
Park	.....	38,688.20	1,521,345	43,167	56,591	36,778	38,691	26,263	55,000	5,390	69,000	7,176	838,000	38,548	1,078,000	50,666	.....	.....	.....	1,434,803	1,605,450	+	170,647	Park	
Pitkin	.60	21	1	35	199,578	123,202	210,176	142,665	500	49	1,200	125	440,000	20,240	532,000	25,001	160,000	7,640	176,000	9,152	151,192	176,981	+	25,789	Pitkin
Rio Grande	19,768.60	691,901	14,446	505,575	60,855	32,876	53,460	36,288	10,000	980	.....	.....	.....	.....	.....	.....	.....	.....	.....	183,894	541,863	—	183,894	Rio Grande	
Routt	41.00	1,435	21	840	19	12	13	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,447	849	—	598	Routt	
Saguache	258.00	9,039	89	3,115	124,825	80,695	48,794	33,121	736,000	72,128	248,000	26,792	227,000	10,442	240,000	11,280	.....	.....	.....	172,295	73,308	—	98,987	Saguache	
San Juan	26,415.40	928,044	16,152	565,320	647,712	418,723	286,156	194,235	2,021,000	198,058	1,013,000	105,352	8,011,000	368,306	2,092,000	98,324	8,549,000	410,352	1,166,300	60,632	2,323,686	1,023,863	—	1,299,822	San Juan
San Miguel	17,131.10	599,704	29,955	1,048,425	471,689	304,930	577,004	391,663	138,000	13,524	210,000	21,840	2,240,000	103,010	3,529,000	165,863	.....	.....	12,900	624	1,021,198	1,628,415	+	607,217	San Miguel
Summit	2,085.50	73,093	1,994	69,790	66,085	36,257	35,310	23,968	3,400	333	5,700	593	342,000	15,732	239,000	11,233	31,000	1,488	198,300	10,296	126,813	116,880	—	10,933	Summit
Teller	145,215.40	5,082,539	134,003	4,690,105	15,195	10,017	17,708	12,020	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,092,556	4,702,125	—	390,431	Teller	
Totals	367,168.00	\$12,861,380	366,852	\$12,839,820	7,932,095	\$6,127,819	8,496,488	\$5,767,313	28,312,000	\$2,777,516	26,430,000	\$2,748,720	18,910,000	\$ 569,860	16,444,000	\$ 772,868	9,106,000	\$437,088	3,660,000	\$190,320	\$22,073,663	\$22,319,041	+\$	245,378	

<sup>1</sup>Includes placer production.

<sup>2</sup>Includes small quantity from placer operations.

<sup>3</sup>Average value of metals in 1939: Gold, \$35 per fine ounce; silver, \$0.678+ per fine ounce; copper \$0.101 per pound; lead, \$9.050 per pound; zinc, \$0.053 per pound.

<sup>4</sup>Average value of metals in 1938: Gold, \$35 per fine ounce; silver, \$0.646+ per fine ounce; copper, \$0.098 per pound; lead, \$9.046 per pound; zinc, \$0.048 per pound.





## CONDENSED REVIEW OF MINING DISTRICTS BY THE FIELD INSPECTORS FOR 1939

### DISTRICT No. 1 by George Becker

District 1 comprises the northern and northwestern counties of the state. During the year 1939 the mining activities progressed in a healthy and encouraging trend. There were around 5,000 men employed in the various operations which come under the jurisdiction of the Bureau of Mines. It is estimated that 1939 will show an increase in production over 1938.

**Boulder County**—Due to new development in virgin territory the future of this county looks good for years to come. The following mills were operated during the year: Boulder, Boston, Black Swan, John Jay, Slide, Saint Joe, Logan and Vickery. Around 400 tons of mill ore were treated daily and approximately 150 tons of crude ore and concentrates were shipped daily to outside plants. The tungsten industry has been on the increase during the year due to higher prices and better demand. The following tungsten mills were operated during the year: Conger, Wolf Tongue, Gold-Silver Tungsten, Mammoth, Cowdery, Good Friday, Eureka, Larson and Lucky Two. The Nederland district has the largest and richest tungsten deposits in the state.

**Clear Creek County**—There was a notable increase in the mining industry in this county during the year due to new discoveries having been made in virgin territory and the future looks good for years to come. The following mills were operated during the year: Lamartine, Lincoln, Freeland, Ruth, Clear Creek Consolidated, Minnesota, Silver Leaf, Colorado, Hoosac and Reynolds. Around 800 tons of mill ore were treated daily and approximately 150 tons of crude ore and concentrates were shipped daily to outside plants.

**Gilpin County**—This county is one of the oldest producers in the state in both lode and placer mining. The following mills were operated during the year: Gold Ridge, Gold Dirt, Old Town, War Dance, Rocky Mountain and Golden Gilpin. Around 200 tons of mill ore were treated daily and about seventy-five tons of crude ore and concentrates were shipped daily to outside plants. A new smelter has been constructed at the Forks and operated by the Boulder Ore Sampler Corporation. Placer operations consisted of the Manion placer operating a power shovel with washing and screening device just below Blackhawk; the Cooley placer, operating a dragline and washing and screening device west of Pinecliffe and a number of small scale operations with shallow shafts and bedrock drifting. All met with good results.

**Grand County**—This is one of the most promising mineral counties in the state, considering the small amount of development

that has been done. The section lying north and west of Jones Pass for a radius of ten miles square offers a good field for prospecting. The veins are large, strong and well defined fissures. The old mining district of Lulu in the northern part of the county is worthy of investigation and the geology is favorable for ore deposits. The Wolverine mine located in Bowen Gulch was operated during the year with good results.

**Jackson County**—This county is noted for its copper, lead and zinc ores. Because it is inaccessible from smelters and railroad transportation, its mineral deposits have not been developed as they should have been. The Independence Mountain district in the northern part of the county shows a large area containing good values in placer gold in small deposits. The old Teller mining district is worthy of investigation. The fluorspar deposits are numerous and the spar is of the best quality.

**Jefferson County**—This county is noted for its large deposits of clay along the foothills and the clay is of the best quality. The clay mining industry has shown an increase during the year. The brick plants in Denver get their supply of clay from mines in this county and they manufacture a product from this clay that finds a market in all parts of the world.

**Larimer County**—The Manhattan mining district, which is located in the western part of the county, shows a number of strong and well defined fissure veins. In some places they form a network of veins or veinlets, with marvelous surface showings, indicating the existence of rich ore deposits. There was one pilot mill operated part time during the year.

**Moffat County**—The northwestern section of this county is noted for its high grade copper deposits in and around Douglas Mountain. Due to the low price of copper, inaccessibility to smelters and railroad transportation, they have not been worked very extensively. In the Timberlake district in the northern part of this county there is a large area showing good values in placer gold. These placers were successfully operated by the use of power dragline shovels and screening and washing devices. A number of small scale operators, using pick and shovel with sluice boxes and rockers, met with good results.

**Park County**—The district around Alma and Fairplay has a past record for producing high grade gold ore and there is every indication that it will continue to produce high grade gold ore for years to come as the great mineral belt along the London Fault has only been scratched. The following mills were operated during the year: London, London Butte, American, Hock Hocking, Alma Betts, Alma Syndicate and Magnolia. Around 600 tons of mill ore were treated and 125 tons of crude ore and concentrates were shipped to outside plants daily. There is a large area around Fairplay and Alma that shows good values in placer gold. These placers have been successfully worked with power shovels, draglines with washing and screening devices, and shallow shafts with bedrock drifting. The Timberline Dredging Company operated

their dredge near Fairplay the entire year with good results. At the head of Buckskin Gulch the Lone Jack Molybdenum Company has developed a large deposit of a good grade of molybdenum ore.

**Routt County**—The Hahns Peak mining district in the northern part of this county is among the oldest in the state but, on account of being inaccessible from smelters and railroad transportation, it has not received the attention it deserves. There is a large area around the old town of Hahns Peak that shows good values in placer gold. This ground will stand investigation. Part of this ground has been worked with power draglines with washing and screening devices and shallow shafts with bedrock drifting and these operations met with good results. There are also deposits of fair grade manganese ore in the Rabbit Ear Pass district.

**Summit County**—During the year there have been a number of projects carrying on new development work which should produce good results. Two new mills were constructed and placed in operation during the latter part of the year—Marlin and Three Kings. This county is noted for its rich and extensive placer gold deposits along the Blue River and the small creeks and gulches that are tributary to the upper section of this river. These placers were worked extensively with power shovels, draglines with portable washing and screening devices. There were also a number of operations using hydropower with sluice boxes and others using pick and shovel with sluice boxes. The Tiger dredge operated part time during the year. All of these operations met with good results.

### **DISTRICT No. 2 by Herrick McLeod**

The mines in Teller county produced over 500,000 tons of ore in 1939. The gold content in this ore amounted to \$4,700,000.00, which was 37 per cent of the gold produced in Colorado. The Golden Cycle Mill, in Colorado Springs, treated 545,320 dry tons during the year, which had a gross value of \$5,369,567.08. Teller County mines furnished 87 per cent of this tonnage. Two local mills in the county, the Kavanaugh Mill on Ironclad Hill, and the Cameron Mill at Cameron, treated a tonnage estimated at 40,000 tons. These mills treated very low grade ore, which would not bear the freight charges to the Golden Cycle Mill. The average gross value of Teller county ores which were shipped to the Golden Cycle Mill was \$9.87 per ton. The largest producers in the county were the United Gold Mines Company group, with 141,071 dry tons, gross value \$1,366,538.97; the Cresson mine with 126,967 tons, gross value \$1,257,454.62; the Ajax mine 33,169 tons, gross value \$562,775.87; the Stratton Cripple Creek M. and D. Company 25,810 tons, gross value \$346,642.38.

The mines generally are in better physical condition than for years past. Shafts have been retimbered, new headframes erected, improved hoisting equipment installed. Much development work has been done to open new ground. A safety record



for all time was made in 1939. Not one fatal accident occurred in the mines. The element of luck must be considered. Nevertheless, great credit is due to all the mine superintendents for their efforts to promote safety, and also, to Parks B. Van Dolah, safety manager for United Gold Mines and associated companies, who makes frequent inspections of all their operations. This allows the State Mine Inspector more time for inspection of other properties in Teller county, and operations in seventeen other counties in District No. 2.

The most important event in the county in 1939 was the beginning of work of driving the new Carlton Drainage Tunnel, which will drain water from the mines of Teller county to a level about 1,140 feet below the level of the Roosevelt Deep Drainage Tunnel. The project is financed entirely by the Golden Cycle Corporation. The best and most modern equipment for tunnel work has been secured. Ground at the portal was broken on July 18, 1939. On January 1, 1940, the tunnel had been driven about 7,000 feet. The length of this tunnel to a point under Portland No. 2 shaft will be about 32,000 feet. There will be laterals of 5,000 feet to the Cresson, and to the Vindicator mines. Mr. John Austin, the tunnel superintendent, stated when the tunnel was started that he hoped to make a record for safety and for speed. He has made both records so far. A record has been made for 24-hour footage, and also for a month's footage. An average of over 50 feet in 24 hours is being made. No serious accidents have occurred.

The mine owners and the miners of Teller county are fortunate in having the advantage of the milling facilities furnished by the Golden Cycle Corporation. They are also fortunate in the fact that this corporation is forward looking, and has enough faith in the future of Teller county mines to spend a vast amount to drive this drainage tunnel. The Carlton Tunnel will extend the active life of this great gold camp indefinitely.

Few of our citizens realize the resources of Colorado in non-metallic products. The production of nonmetallies gives employment to many men. A considerable increase in production of many of these substances was reported during 1939. In District No. 2 twenty different nonmetallies are produced. In Bent county, bentonite is produced and shipped to Texas, where it is used for drilling mud in oil wells. In Custer county, a large tonnage of barite is mined. It is treated at the Colorado Barite Company's concentrator at Ilse. The concentrates are used in refining sugar. Vermiculite is also produced in Custer county. In Douglas county, fire clay, plastic clay, silica sand, feldspar, and limestone are produced. In El Paso county, dolomite, limestone, Manitou green stone, potters' clay, and plastic clay and shale are produced. Fremont county produces dolomite, limestone, gypsum, marble, travertine, feldspar, mica, granite, plastic clay, ganister, vermiculite, and beryl. The Colonna Grinding Plant in Canon City reports increased business for the year. In this plant marble and travertine are ground in three different sizes and in eleven

distinct colors. These are used in the manufacture of terrazzo, which is used for decorative flooring. This company also mined and shipped a number of carloads of a beautiful colored travertine, in blocks. This travertine was shipped to New York, where it was sawed into thin slabs and polished, for use in interior decoration. In Huerfano, Las Animas, Otero, and Pueblo counties, fire clay, silica sandstone, shale, plastic clay, and gypsum are produced. Of these, all but gypsum are used in the large brick and tile plants of Trinidad and Pueblo. The gypsum mined in Pueblo and Fremont counties was all shipped to the Ideal Cement plant, at Portland, Colorado. A large tonnage of limestone and lime shale was also used in this plant. Many thousand tons of limestone, produced in Fremont and El Paso counties, was shipped to various sugar refineries. A large tonnage of limestone from Fremont county was shipped to the Leadville smelter. Most of the mica mined in District No. 2 is used in the manufacture of elaterite roofing, and the vermiculite is used for insulation. The large tonnage of dolomite produced in Fremont county is used by the C. F. and I. Company of Pueblo, as a flux. A fine business in commercial lime products has been built up by the Thomas and Brown Lime Company, operating in Maniton Springs. Much money has been spent in modernizing and equipping their plant, and in improving safety conditions. The company makes five different lime products from limestone and dolomite, mined in their quarries in El Paso county.

### DISTRICT No. 3 by R. J. Murray

The war clouds hovering over part of the European nations and the race for armament supremacy have no doubt increased the search and consequent production of the metals necessary for armament and other war uses. The nationalized domestic price of silver has not given mining the expected impetus; however, a marked effect is shown by the increase in employment in districts where the white metal predominates or is a factor in the complex ores, and also in increased production in 1939 over 1938. This is indeed encouraging and speaks well for what may happen to silver mining during the coming year. The production of gold in this district is considerably greater than that of the past year so it is reasonable to assume that the metallic wealth of gold the coming year will far exceed that of former years. This assumption is based on the number of mines long inactive which are now being reopened and the number of engineers making inquiries and examinations of forgotten areas where gold has heretofore attracted the prospector and the miner. Manganese properties long idle are again operating as indicated by the tonnages being shipped, particularly from the Leadville district. In addition to this several small operations are developing properties of manganosiderite for probable future production. Lead, zinc, copper and other metals and minerals have shown a decided increase in production over last year. Colorado, with approximately 30,000 square miles of mineralized area and with a past production in

metallic wealth as a background, has within its confines the greatest and most inviting mining fields of any state in the union.

**Chaffee County**—This county may well be said to be the banner lime producing county in the state. Two thousand tons of lime rock daily have been shipped from the C. F. & I. owned Monarch quarry to the company's steel works at Pueblo. A large force of trainmen and quarrymen are necessary to move this lime rock. Thousands of tons of fluorspar have been shipped during the year from several of the operating fluorspar mines in the county, while others are in the development stage. A 75-ton mill has recently been completed at the Colorado Fluorspar Corporation's mine. Two mines in the Trout Creek district are also shipping a fair tonnage of feldspar. The Salida, Warner and Bowen granite quarries have during the year mined a large footage of granite which has been used in the manufacture of monumental stone. The Salida quarry product is dressed, polished and lettered at the company's dressing plant at Salida, while the products from the other quarries are shipped to Denver for finishing work.

The Stenner mill completed the latter part of this year is operating on gold ores from the Hersey tunnel in Low Pass Creek, adjacent to Granite. Placer and several lode mining operations are being carried on in this section. The Lost Canon placer field prospered during the year past as indicated by the gold shipped. Mining activities have progressed during the year on the Mary Murphy, with fair tonnages of gold ore shipped. The reopening of the Stonewall in the Hancock district and a small amount of new work in the St. Elmo area lends encouragement to that section. Mining operations have been active in the Garfield and Monarch districts and have added their quota to the ores shipped from this county.

**Conejos and Costilla Counties**—While not yet classed as metal mining counties, they have, however, a number of prospectors yearly in the mountainous sections of these counties. Reports of new finds have been made which we hope may later develop into paying mines. In Conejos county the Forest King mine was reopened and worked until November of this year and others in this section have done some development work. The King turquoise mine in Conejos county, east of Manassa, has made a steady production of turquoise during the year. This operation is one of the oldest in the State of Colorado.

**Eagle County**—The famous Empire Zinc Mines are accountable for an overwhelming share of the tonnages of ore shipped from this county during the past year. Approximately 1,300 tons daily have been shipped from this massive producer of sulphide ores during 1939. All ores are shipped via the D. & R. G. W. railroad to Utah, with the exception of a small amount to the A. V. Plant at Leadville. The ores from the Ben Butler are being washed and sorted before shipment is made. Several small operations are adding their quota to the gold production and mineral



wealth coming from this county. In other sections of the county placer miners and prospectors have been active with favorable reports emanating from those sections.

**Garfield County**—The Grey Eagle mine located on Elk Creek has made regular shipments of gold ores during the year. The ores are trucked ten miles to Newcastle for shipment. The Glenwood lime quarry has made its usual shipments of lime rock to the Holly Sugar plants. The vanadium sandstones in this county are being prospected in the hope that another mine such as that formerly operated by the U. S. Vanadium Corporation east of Rifle may be developed. It is rumored that tentative plans are in the making for a campaign of oil well drilling in this county. Prospectors are known to have been active north of Glenwood Springs in an old abandoned mining section.

**Gunnison County**—Small mining operations have been carried on periodically during the year past in the northwestern part of this county. The immense Yule Colorado Marble quarry has enjoyed an active year and has worked a large force of quarry and dressing plant workers. The Capitol Annex, recently completed at Denver and said to be the finest and most attractive building in the state, is largely constructed from marble mined at this quarry. The State Museum and the U. S. Customs building are among some of those erected from marble mined at this quarry.

**Lake County**—The colossal and famous Climax Molybdenum mine in this county is accountable for a very large share of employment in the county with more than 1,000 employed at this time. During the year the mine tonnage was reduced to 7,500 tons daily, thereby reducing the operating force at the mine and mill. Within the past month or two the normal tonnage of 15,000 tons daily has again been resumed. Many new buildings, industrial and otherwise, have been completed. They are all of fireproof material and the last of the wooden structures adjacent to the mine and mill are being removed and replaced by fireproof buildings. A large storage building of concrete, structural iron and corrugated sheeting, is awaiting the completion of the foundation work. Approximately 175 modern homes of 4 to 9 rooms are occupied by company employees. Movie shows, dancing, basketball, skiing and other forms of amusement are part of the recreation enjoyed by the company employees.

Within the Leadville district many mines have operated during the year and have produced a large tonnage of various types of ore. Most of the ore was sent to the A. V. Smelter at Leadville. A few of the steady producers may be mentioned as follows: Resurrection group, Dolly B., Valley, Famous, Forbes Tunnel, Ollie Reed, Big 4, St. Louis Tunnel, Fanny Rawlings, Ibex group, Venir, Triumph, Chippewa, Benjamin Franklin, Fairview shaft, M. & N. Fraction, First National, Lilly mine, Monarch shaft, Lillian, Johnson Incline, Killarney group and Jitterbug shaft. Thousands of tons of dump ore have been run through the following mills during the year: Venir mill, H. G. N., First National,

D. & D., and Leadville mill. The A. V. Smelter is running one blast furnace steadily with a capacity of 410 tons daily, largely on Leadville and other Colorado ores. The Hallenbeck dry land dredge near Twin Lakes has enjoyed a prosperous year judging from the gold shipped. The Last Chance mine has completed a surface tram, sawmill, mine buildings and mine equipment and will start underground operations shortly. The Eureka Saturday Night on Independence Pass has been inactive since the fire early this year destroyed many of their buildings and cable tram.

An area in Leadville that has produced nearly one-half billion dollars in wealth, with massive ore bodies left, is still under water. Farmers, if the dry seasons prevail, here is your chance to develop a flow of water that is continuous the year round. A drainage tunnel is the answer. You have done it, you can do it again and rejuvenate one of the greatest mining camps on earth.

**Mineral County**—Creede, the silver producing camp of the state, has had a fairly active year. Practically all of the mines, though not on a large scale, have produced a steady tonnage of ores. Creede is fortunate in having a successful custom mill through which their low grade mill ores can be treated. All operators are given an allowed daily or monthly tonnage to the mill, while their better grade of ores is shipped to the smelters. The Creede Mills, Inc., have acquired through lease and otherwise a number of former producing mines. This company has reopened the Amethyst No. 5 tunnel, inactive for a great many years, and is pushing through a campaign of new prospect and development work. This work will intersect these properties at a considerable depth and will ultimately be the means of diverting all the ores mined above through this tunnel. It is large and completely equipped for heavy haulage when necessary. The following mines in the Creede district are active and on the shipping list: Monon, Corsair, Commodore No. 3, Volunteer, Del Monte, Last Chance, New York and Amethyst No. 5. Several dumps are also being sorted and shipped to either mill or smelter. A small amount of prospect work is being done in the outlying districts, notably that of the Teresa tunnel near Spar City. The Wagon Wheel Gap fluorspar mine and mill have been active with a resulting tonnage of milled spar being shipped to the Company's C. F. & I. Steel Plant at Pueblo. The bentonite mine has been inactive during the year past. The Creede Mills, Inc., have run continuously during the year on a 120 to 150 ton capacity output.

**Pitkin County**—The Midnight mine and mill have kept up a steady production of concentrates and crude ores, and also have done a great deal of new prospecting and development work which will be noticeable in the coming year's production of ores. Motorized haulage is being put in the tunnel at this time which will greatly facilitate the handling of ores and supplies and no doubt will curtail the costs of underground haulage to a minimum. Tentative plans for a campaign of new work on this mine are being drawn and will be under way during the coming year. The consolidated holdings of the Brown and Wyman interests con-



trolled by Mr. D. P. Rohlfing are being worked by the company and a number of lessees on the various mines in the Aspen district. A large tonnage of silver-lime ores are regularly shipped to the A. V. Smelter at Leadville. Mr. Rohlfing is working out plans for a mill to treat the low grade ores in these mines and hopes to have it under way during 1940. The Highland tunnel is being pushed ahead towards its objective—the Annie contact and the known mineralized area in that section. The Porphyry Mountain Gold Mines Company, located between the Lenado district and the Frying Pan section, carried on work during the summer months with encouraging results. Prospectors were noticeable in the Ashcroft, Lenado and Coal Creek districts in this county.

**Rio Grande County**—The Summitville Consolidated Mines, Inc., has enjoyed a very prosperous year indicated by the gold produced. Gold ores are being mined at many places on this rich mountain at elevations varying from 11,600 feet to over 12,000 feet. In the winter time this company maintains its own snow bucking equipment to keep their camp open at all times to the outside world. Practically all of the ores mined are diverted over a bucket tram to a 150 ton mill and timber and supplies for the higher operations are trucked in during the summer months. Homes for the married employees are provided at this mine camp and bunk and boarding houses are conditioned with steam heat for the single employees. Various forms of amusement are provided by the company for the benefit of their employees. A company hospital is maintained with a full time registered nurse in charge for camp employees and their families. Activities on a small scale were carried on in the Jasper and Stunner districts.

**Saguache County**—The outstanding feature in this county is the present construction of a 50 ton Mace smelter in the town of Bonanza which will probably be in operation before the close of this year. The smelter will operate on the immense bodies of low grade sulphides from the Rawley and other mines in the Bonanza district. The Rawley is reopening their large low grade ore bodies preparatory to shipping to the smelter when operations begin. The Triple T. Company, located at the foot of the Sangre de Cristo range, has during the year completed a 75 ton mill to handle the gold and copper ores of that district and is also carrying on new prospect and development work. The Commander, inactive for some time, has again reopened with an entire new plant of machinery preparatory to sinking the present shaft an additional 100 feet. New roads have been completed to this mine making it accessible by truck and auto. The Hall turquoise mine west of Villa Grove has installed a water line and has washed out a great deal of marketable turquoise from the many dumps on this property. Underground work has also been done and new areas containing this beautiful stone have been opened. The stone is being sent to a waiting market for jewelry purposes. Several small operations are sending out fair tonnages of ores from the Round Mountain and Bonanza sections—noticeably the Pickering lease on Rawley No. 3 and Bowers lease on the Jupiter. A mill is oper-

ated by C. C. Anderson on ores from the Paragon and Michigan mines.

#### **DISTRICT No. 4 by Dan C. McNaughton**

District No. 4 covers the entire southwestern portion of Colorado. Metal mining made great strides in this district this year as a result of favorable prices for gold and silver as well as other metals. A probable demand for so-called strategic minerals used in war supplies stimulated exploration and prospecting for tungsten, manganese and molybdenum.

The mass of production from this district consists of gold, silver, copper, lead, iron and zinc.

The great uranium and vanadium deposits in the western part of this district produce most of our nation's supply of these minerals.

Shipments of both crude ore and concentrates this year from District No. 4 are greater than for many years. These ores are shipped to smelters at Leadville, Colorado; Midvale, Utah, and Amarillo, Texas. Gold bullion is sent to the Denver Mint.

Besides the active properties mentioned in this report, many others are being cleaned out, retimbered and put in shape to be ready for production next year. Considerable placer mining was done on the Dolores, San Miguel, Animas and Gunnison rivers.

Approximately 2,000 men are employed in all branches of the metal mining industry of this district. The outlook for 1940 is exceptionally good. A summary of the activities of this district follows:

**Dolores County**—Mining activity in this county is very encouraging. Of prime importance is the Rico Argentine Mining Company. They have built a new 150 ton flotation and concentration mill which was started in 1938 and completed early in 1939 and is now operating to capacity on profitable ores. A huge development program has been carried on exposing vast new ore bodies. G. T. Van Winkle is general manager of this company. About 50 men are employed.

The St. Louis Tunnel of the St. Louis Smelting and Refining Company continued its vast development and exploration program during the greater part of the year. They employ about 50 men. Duane Kline is general manager.

The Lexington Tunnel of the International Smelting and Refining Company started a diamond drilling program to explore known ore bodies at depth. J. O. Elton is manager.

Besides these major activities, leasing, prospecting and some placer mining were carried on in the county.

**Gunnison County**—The mining industry of this county has been very active the past year. The Carter mine in the Gold Brick mining district continues to be the major operation, employing approximately 25 men. They operated their mine and mill to capacity during the year on very profitable ores. Their development program uncovered large bodies of very good ore. W. D. Murdie is general manager.

Further activities in the Gold Brick mining district include the Burleson Mines, Inc., which adjoins the Carter mine. They started operations about April 1, cleaning out and retimbering the 2,000 foot tunnel and continued to drive the heading, uncovering profitable bodies of ore which warranted the remodeling of the old stamp mill and installing modern flotation and concentration equipment. S. E. Burleson is manager.

Besides the above mentioned operations, several smaller properties operated. Prospecting and exploration work and some placer mining have been carried on. Molybdenum, feldspar, vermiculite and similar minerals occur in this county.

**Hinsdale County**—Of interest to this county was the resumption of work on the Golden Mammoth, Inc., formerly the Golden Wonder mine. This company has built two and one-half miles of truck road, repaired buildings, cleaned up and retimbered the mine and has shipped considerable crude ore to the smelter. T. F. Abbott is manager.

Several other properties are operated by leasers and considerable prospecting and exploration work has been carried on.

**La Plata County**—The various mining sections of La Plata county showed much activity during the year in both large and small operations. Leasers on the famous May Day in the La Plata Mountains operated their mine and mill continuously throughout the year.

Of further interest to this district is the development program of the equally famous Idaho mine which adjoins the May Day. A contract has been let for 1,200 feet of crosscut tunnel to uncover at depth ore bodies prominently shown and explored on the surface. This property is equipped with a 50 ton modern flotation reduction plant. Ivan E. Goodner is manager. Many other small operations, both lode and placer mines, and much prospecting have been carried on.

**Mesa County**—This county shows an upsurge in mining this year over that of 1938. Considerable activity in prospecting, exploration and developing was carried on in Mesa county on its various ores. The major operation is the Gateway Alloys Mines and Reduction plant. This company mines and mills a profitable grade of carnotite ore. These ores are trucked from their mines in the Calamity district to their modern reduction plant at Gateway, Colorado. H. L. Brown is the manager.

The U-Naweep mine (formerly the Copper Rivet mine) started operations about June 1, 1939. They installed an air compressor, jig-back tram and equipment and cleaned out and retimbered the east portal of the U-Naweep group, where work is now being carried on. They drove a two-compartment raise which extends 175 feet above the main level. At this point a vein was uncovered, supposed to be the Copper Rivet vein, and shipments are expected to be made in the near future. K. A. Miller is manager.

**Montezuma County**—Mining has been active in this county during the year with several lode mines operating and some placer



mines. The famous Red Arrow gold mine operated continuously this year. Besides carrying on a well-planned program of development, a 25 ton flotation and amalgamation mill has been built and is now operating on a profitable grade of ore. Besides the mill product, considerable crude ore is shipped to the smelter. Gold bullion is sent to the mint. George Gilmore, Sr., is manager of this property.

**Montrose County**—The mines of this county are located in the western portion. The major operation is the U. S. Vanadium Corporation of Uravan. Blair Burwell is general manager. They employed over 300 men and operated their carnotite mines continuously throughout the year. Besides a vast program of development and exploration they mined and milled about 90,000 tons of carnotite ore during 1939. Additional milling facilities were installed to treat tailings from the 250 ton reduction plant. The additional equipment will include a refining unit to recover uranium values from the tailings, left after vanadium has been extracted. They also operated their own coal mine and salt works.

The Simpson Mining Company, Incorporated, operated the Cashin mine, located near Paradox, Colorado, and are constructing a 75 ton reduction plant to treat their copper-silver-lead ores.

There is also much activity in prospecting and developing other properties.

**Ouray County**—Mining is of outstanding importance in this county. Chief among the large operations is the King Lease on the Camp Bird, Limited, which has been in continuous operation during the year, employing approximately 100 men. Besides milling 100 tons of ore per day in their amalgamation and flotation mill, they carried on a major program of development and exploration. They have connected the 3rd level, which is the main transportation level of the King Lease, Inc., with No. 14 level of the Camp Bird, Ltd., which was the main haulageway of the Camp Bird, Ltd., when it was operated many years ago. No. 14 level is approximately 11,000 feet in length from the portal. This connection consists of 1,000 feet of shaft on various levels and a 500 foot raise. These raises and shaft are equipped with cages, skip, etc., with up-to-date equipment, well installed. Most all mining operations at this time are carried on from the main Camp Bird, Ltd., camp located approximately 1,500 feet below No. 3 level of the King Lease, Inc. Boarding and sleeping quarters for men are located at this camp and men are transported through the main Camp Bird tunnel by skip and cages to their various working places.

Another important improvement is the installation by the King Lease, Inc., of a new modern flotation and amalgamation milling plant in the old Camp Bird mill located at the Camp Bird, Ltd., camp which will eliminate the handicap of roads and trails closed by excessive weather conditions in the higher altitudes during the winter months. All ores in future will be lowered to this main Camp Bird level by gravity and will be processed in

the new mill recently completed at the Camp Bird, Ltd., level. Charles N. Bell is general manager of the King Lease, Inc.

The San Juan Metals Corporation operated the Treasury tunnel south of Ouray, Colorado, in the Red Mountain mining district carrying on a development and exploration program until about April first. Early this fall this property was taken over by a new company known as the Idarado Mining Company, Inc., and they are at this time carrying on a major program of revamping the Treasury tunnel and cleaning out and retimbering where needed. This tunnel will be the main transportation tunnel for their future large program of developing ore bodies known to exist in the company's various holdings. Robert Martin was former manager of the San Juan Metal Corporation and is now engaged in the same capacity with the new company.

The Mineral Farm mine located in the Uncompahgre mining district of Ouray county is carrying on an extensive program of development which includes extending the main crosscut heading, various drifts, raises, etc. This property is under the supervision of W. M. Cutler.

Of vast importance to Ouray county are the G. A. Franz interests under the supervision of G. A. Franz, Jr., general manager. The many properties owned and controlled by them throughout Ouray county are carrying on a well directed system of development and exploration. Their Banner-American mill has operated intermittently on their own and custom ores this past year.

Again of great importance to Ouray county are the profitable ores mined in the American Nettie, approximately 100 feet below the old profitable operations of previous years. Wm. McCullough and F. A. Withrow operating under bond and lease are responsible for recovering this profitable ore at this depth and they are continuing operations downward.

Altogether, Ouray county's mining activity is on the upsurge this year with many smaller lode mines in various stages of development. A great amount of prospecting was done as well as locations made and assessments worked. Some small amount of placer mining was done.

**San Miguel County**—In 1939 this county broke its record for many years both in number of men employed and in amount of ore shipped.

The Veta Mines, Incorporated (formerly the Smuggler-Union) has operated mines and mill continuously during the year. Besides mining and milling approximately 500 tons per day of a profitable grade of ore they carried on an extensive program of mine development and exploration, together with construction and improvements of both mine and mill buildings, including the installation of a washing and sorting plant in the steel mill at Pandora. They also installed a new primary crusher, replacing the old crusher plant at the mine. Ores are mined in the 16, 17 and 18 levels below the Pennsylvania tunnel and in various levels above. The hydroelectric plant has been moved from its former location and installed in the steel mill. Another major develop-

ment is the driving of a 1,500 foot tunnel to tap Blue Lake at a 100 foot depth, one of the water sources to supply power for a new hydroelectric plant which is being erected by the company at that point.

Robert Sayre is president and general manager of the company, which employs over 200 men.

Of importance to the district is the acquisition by the Veta Mines, Inc., of the famous Tomboy group of mines. A crosscut tunnel is now being driven from a point in the Pennsylvania tunnel to explore the Tomboy ore bodies at greater depth. This crosscut tunnel will be approximately 3,800 feet in length.

The Alta-St. Louis has operated continuously during the year. They are milling approximately 150 tons per day of profitable ore which is mined in various levels above Blackhawk tunnel. They also carried on a program of development and exploration which includes a crosscut tunnel being driven from a point 2,300 feet from the portal of the main tunnel to explore ore bodies on the St. Louis group at greater depths. This crosscut will be approximately 1,800 feet in length. A construction program was carried on this year consisting of moving the large boarding and bunkhouse from the St. Louis property to the Alta main camp. A new compressor house has been built and a large air compressor formerly used at the St. Louis has been moved to this location. Additional improvements in the mill have increased its capacity. They also operate a washing and sorting plant. D. E. Harrison is resident manager and about 95 men are employed.

The Butterfly Consolidated Mines have operated continuously throughout the year and are mining and milling approximately 150 tons per day of profitable ores; also a program of development and exploration has been carried on. Additional construction at the mill and installation of secondary grinding equipment has increased the mill capacity from 100 to 150 tons per day. A new electrically driven air compressor is installed at the portal of level No. 4, or mill level. Much of the ore is being obtained from the Ida above No. 3 level and ore is also mined above No. 4 or mill level. This property employs about 80 men. Walter E. Binner is general manager.

North Continent Mines in the Klondyke mining district have operated their mines and 150 ton reduction plant throughout the year on vanadium ores. Besides mining ores in their various properties a program of development and exploration is carried on continuously. They employ about 55 men. A. Q. Lindquist is manager.

There are many other smaller properties shipping ore and operating pilot mills as well as considerable prospecting, exploration, locating claims, assessment work, etc.

**San Juan County**—This county has experienced a busy mining season.

The Shenandoah-Dives Mining and Milling Company operated continuously this year with the exception of a seven-weeks suspension caused by controversy over the Fair Labor Standards



(Wage-Hour) Act of 1938, as interpreted by Local Union No. 26. They milled over 195,000 tons of their own ore and 3,500 tons of custom ore, producing 5,700 tons of concentrates from their own ore and 567 tons from custom ore. Ore is mined both above and below the main haulage level. A major program of development and exploration is carried on at all times. The reduction of working time delayed completion of the company's two major development projects. However, despite the delay, the 1,700 foot raise east, which connects with the old North Star on King Solomon Mountain has been completed and is being equipped with an electrically controlled automatic system which is up-to-date in every detail.

A new hoist together with hoisting equipment has been installed. The 3-deck cage in which men are raised and lowered is of 24-man capacity. Below it is a 5-ton ore skip which will be used for the present and until ore passes are excavated to hoist ore from levels which will later be connected by these ore passes. This electrical equipment is "foolproof" in every detail, with a radio address system providing communication at all times for men both on cage and at various level stations with the hoist operator. The other major project is the zero shaft to 400 level westerly which is now nearing completion. This excavation at this time is approximately 2,800 feet below the highest part of the outcrop.

Another important activity of this company was the driving of the crosscut tunnel started in 1937 to explore veins of both the Silver Lake and Iowa Tiger group at depth. This crosscut was driven approximately 4,000 feet from the starting point in the Shenandoah-Dives main tunnel and still continues.

Operations at this time consist of driving a 2-compartment raise to further explore these Silver Lake and Iowa Tiger veins and for ventilation purposes. The veins encountered in this development were drifted on prior to starting the raise and ores therein are stated to be profitable. The Shenandoah-Dives employs approximately 250 men. Charles A. Chase is general manager and C. I. Cook is general superintendent.

Treasure Mountain Gold Mining Company continued its major program of development and exploration already started. Contractors during the winter completed 690 feet of crosscut and drifts in the Santiago tunnel, finishing their contract June 5 this year. At a point approximately 1,400 feet from the portal the Scotia vein was intersected. This point is about 900 feet below the surface. During the summer months the company confined all work to the Scotia group of the Treasure Mountain Gold Mining Company. Operations consisted of exploration and prospecting. Recently a contract has been let to extend the heading of the Santiago tunnel 800 feet. This is the main working level. This tunnel is now excavated a distance of approximately 1,700 feet. The company also did considerable diamond drilling in the Saratoga tunnel and drift prospecting the Double Eagle vein.

During their development and exploration program profitable ores have been uncovered. D. M. Haynes is manager.

The Brooklyn mine operated throughout the year and is a consistent producer of gold ores. Ores were shipped both to the smelter and the Shenandoah-Dives custom mill. Also a large amount of development work has been carried on. J. E. Carney is manager.

The Blanco mine, formerly the Bandora, operated most of the year. They mined considerable profitable ore which was shipped to the smelter and custom mill. They are also carrying on a well directed program of development. In addition foundations are being laid for a 40 ton modern flotation mill located below the mine portal. It is expected that this mill will be completed early in 1940. A. J. Yahn is general manager.

The Little Fanny mine operated most of 1939 mining and shipping both crude ore to the smelter and milling ores to the Shenandoah-Dives custom mill. These ores carry high values in gold, silver and copper. Considerable development work has been carried on. They also constructed a half mile aerial, 2-bucket tramway connecting the mine with the county highway in Cunningham Gulch. John J. Gilheany is manager.

Of interest to San Juan county is the Highland Mary Mines, Inc., which has carried on a well directed program of development and exploration of their mines as well as an outstanding program of construction and improvements. They have completed the building of a new heavy duty jig-back 1,200 foot tramway which reaches from the mill to the top of the adjacent mountain. An 800 foot crosscut tunnel starting at this point will be driven to connect with No. 2 level of the old workings of the Trilby group which belongs to the Highland Mary Mines, Inc. Ore will eventually be delivered from this operation to the Highland Mary mill, now under construction. Other improvements made to facilitate milling operations include a 1,400 foot jig-back tramway from the upper terminal to contact the portal of the Mountaineer and Lookout workings, also known as No. 1 level of the Highland Mary group. Ores from this operation will also be delivered to the Highland Mary mill for treatment. The pipe line connecting Highland Mary lake with the mill has been repaired with 12-inch and 14-inch pipe where needed. This water system is stated to have an 880 foot head and furnishes power direct to compressor, etc., through a Pelton wheel. Another Pelton wheel furnishes power for a 150 h.p. generator which will be used to operate mill equipment, etc. The mill mentioned above will be a modern flotation plant of 75 tons capacity with washing and sorting equipment. It will be completed early in 1940.

Construction of tramway, water lines, etc., together with mine development, started July first. Considerable ore has been shipped to the Shenandoah-Dives custom mill. The number of employees averaged 25 men throughout the season, both underground and on the surface.



The Highland Mary and Trilby groups of mines held enviable shipping records in the past, producing high grade silver, copper and gold. Joseph M. Bradley is manager.

Several groups of leasers operated various properties belonging to the Mystery Gold Mining Company. The Brewery tunnel was operated continuously during the year and the Jennie Parker area was mined part of the year. A tungsten mill of approximately 25 ton capacity was constructed for treatment of tungsten ores from the Empire vein. The Gladstone stope and Sultan tunnel of the North Star group were operated under lease part of the season; also a development program was carried on intermittently on the Wheal Alfred near the north end of the North Star vein. Ore shipments were made from the Brewery tunnel, the Jennie Parker and the Gladstone stope of the Sultan tunnel to both the smelter and the Shenandoah-Dives custom mill. Warren C. Prosser is president and general manager of the Mystery Gold Mining Company.

The Crusader Gold mine, formerly the Kankakee group, located at Bear Creek in the Animas mining district operated part time this year, carrying on a program of development, exploration and prospecting which included cleaning out and retimbering various parts of the mine which were operated several years ago. Maude W. Russell is manager.

The Old Hundred Gold Mining Company, located in Cunningham Gulch in the Animas mining district, did not operate their mines for production this year but conducted a program of exploration, sampling, estimating and accumulating data for a contemplated operating program in 1940. Benjamin F. Webster is manager of the Old Hundred property.

## HISTORICAL NOTE

The Bureau of Mines of the State of Colorado was established by an act of the Tenth General Assembly, approved March 30, 1895. This act repealed a previous act creating an "Inspector of Metalliferous Mines," which was passed in 1889. The Bureau of Mines law established the office of Commissioner of Mines, provided for in the State Constitution, and charged him, among other things, with the supervision of metal mine inspection and the enforcement of laws relating to safety and health in metal mines. Subsequently this was broadened to include "any ore mill, sampling works, smelter, metallurgical plant, rock quarry, clay pit, railroad tunnel, rock excavation or mine of whatsoever kind or character except coal mines." The Commissioner of Mines was also charged "as he has opportunity and means" to collect mineral specimens and exhibit the same, to collect books relating to mining and geology, to collect and preserve data regarding mining methods, mining costs, milling, metallurgy, geology, mineral deposits of all kinds, and so on. Aside from the purchase of the Elsner collection of minerals, very little "opportunity and means" has been granted to the Commissioners for anything except inspection work. A strong effort is being made at this time not only to make mining as near absolutely safe as possible but to help and encourage it in every legitimate way possible. The present activities of the Bureau of Mines are treated elsewhere in this report.

## COMMISSIONERS OF MINES

Harry A. Lee.....	May 11, 1895-May 10, 1903
E. L. White.....	May 10, 1903-May 10, 1907
T. J. Dalzell.....	May 10, 1907-May 10, 1911
T. R. Henahan.....	May 10, 1911-May 10, 1915
Fred Carroll.....	May 10, 1915-June 1, 1919
Horace F. Lunt.....	June 1, 1919-June 1, 1923
John T. Joyce.....	June 1, 1923-June 1, 1927
John T. Joyce.....	June 1, 1927-June 1, 1931
John T. Joyce.....	June 1, 1931-June 1, 1935
John T. Joyce.....	June 1, 1935-June 12, 1939
Edward P. Arthur.....	June 12, 1939-

## PUBLICATIONS OF THE BUREAU OF MINES

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### BULLETINS

- Bulletin No. 1, Recommendations for Safety Appliance in Mining, Harry A. Lee, Commissioner of Mines, 1896.
- Bulletin No. 2, Precious Metal Production for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.
- Bulletin No. 3, Mining Laws, Relative to Bureau of Mines Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1899.
- Bulletin No. 4, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1901.
- Bulletin No. 5, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1902.
- Bulletin No. 6, Regulations Relative to the Construction, Equipment and Operation of Metalliferous Mines, Mills and Metallurgical Plants, Recommendations and Mineral Production for 1905, E. L. White, Commissioner of Mines, 1906.
- Bulletin No. 7, Federal and State Laws Relating to Mining, Fred Carroll, Commissioner of Mines, 1916.
- Supplement to Bulletin No. 7, Mining Laws Enacted by the Twenty-first General Assembly, Fred Carroll, Commissioner of Mines, 1917.
- Supplement No. 2 to Bulletin No. 7, Amendments to the Mining Laws Enacted by the Twenty-second General Assembly, Horace F. Lunt, Commissioner of Mines, 1919.
- Supplement No. 3 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-third General Assembly, Horace F. Lunt, Commissioner of Mines, 1921.
- Supplement No. 4 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-fourth General Assembly, Horace F. Lunt, Commissioner of Mines, 1923.
- Bulletin No. 8, The Oil Shales of Northwestern Colorado, Horace F. Lunt, Commissioner of Mines, 1919.
- Bulletin No. 9, Mine Safety Standards, Horace F. Lunt, Commissioner of Mines, 1920. Out of print, now embraced in Bulletin No. 11.
- Bulletin No. 11, Federal and State Laws Relating to Mining, John T. Joyce, Commissioner of Mines, 1931.

### REPORTS

- Report of Bureau of Mines, Colorado, from its establishment in May, 1895, to November 30, 1896, Harry A. Lee, Commissioner of Mines, 1896.

Report for the Year 1897, Harry A. Lee, Commissioner of Mines, 1898.

Report for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.

Biennial Report for the Years 1899-1900, Harry A. Lee, Commissioner of Mines, 1900.

Biennial Report for the Years 1901-1902, Harry A. Lee, Commissioner of Mines, 1903.

Biennial Report for the Years 1903-1904, E. L. White, Commissioner of Mines, 1905.

Biennial Report for the Years 1905-1906, E. L. White, Commissioner of Mines, 1907.

Biennial Report for the Years 1907-1908, T. J. Dalzell, Commissioner of Mines, 1909.

Biennial Report for the Years 1909-1910, T. J. Dalzell, Commissioner of Mines, 1911.

Biennial Report for the Years 1911-1912, T. R. Henahen, Commissioner of Mines, 1913.

Biennial Report for the Years 1913-1914, T. R. Henahen, Commissioner of Mines, 1914.

Biennial Report for the Years 1915-1916, Fred Carroll, Commissioner of Mines, 1916.

Biennial Report for the Years 1917-1918, Fred Carroll, Commissioner of Mines, 1919.

Annual Report for the Year 1919, Horace F. Lunt, Commissioner of Mines, 1920.

Annual Report for the Year 1920, Horace F. Lunt, Commissioner of Mines, 1921.

Annual Report for the Year 1921, Horace F. Lunt, Commissioner of Mines, 1922.

Annual Report for the Year 1922, Horace F. Lunt, Commissioner of Mines, 1923.

Annual Report for the Year 1923, John T. Joyce, Commissioner of Mines, 1924.

Annual Report for the Year 1924, John T. Joyce, Commissioner of Mines, 1925.

Annual Report for the Year 1925 was fully prepared but because of lack of funds was not printed. The manuscript is on file in the office of the State Bureau of Mines.

Annual Report for the Year 1926, John T. Joyce, Commissioner of Mines, 1927.

Annual Report for the Year 1927, John T. Joyce, Commissioner of Mines, 1928.

Annual Report for the Year 1928, John T. Joyce, Commissioner of Mines, 1929.

Annual Report for the Year 1929, John T. Joyce, Commissioner of Mines, 1930.

Annual Report for the Year 1930, John T. Joyce, Commissioner of Mines, 1931.

Annual Report for the Year 1931, John T. Joyce, Commissioner of Mines, 1932.

Annual Report for the Year 1932, John T. Joyce, Commissioner of Mines, 1933.

Annual Report for the Year 1933, John T. Joyce, Commissioner of Mines, 1934.

Annual Report for the Year 1934, John T. Joyce, Commissioner of Mines, 1935.

Annual Report for the Year 1935, John T. Joyce, Commissioner of Mines, 1936.

Owing to lack of funds the 1936 Annual Report of the State Bureau of Mines was not published.

Annual Report for the Year 1937, John T. Joyce, Commissioner of Mines, 1938.

Owing to lack of funds the 1938 Annual Report of the State Bureau of Mines was not published.

At the time this report goes to press, there are available for distribution copies of the Annual Reports for 1921, 1922, 1926, 1928 and 1932. The 1929, 1930, 1931, 1933, 1934, 1935, and 1937 Annual Reports are out of print. The publications not mentioned in this paragraph are exhausted, but copies may be consulted in many of the public, state and college libraries throughout the country.

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Note—The Colorado Geological Survey has published a number of geological reports and maps, a list of which may be obtained from the head of the Geology Department of the University of Colorado, Boulder, Colorado.



## MINE ACCIDENTS IN COLORADO

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The operators, employees and especially the small leasers should be congratulated on the reduction of mining accidents, both fatal and otherwise, in the state during 1939. The lessening of these accidents has been very good but the decrease is still not sufficient and further progress must be made along these lines.

The employee, or miner, has usually little more than the results of his labor to support himself and family on the plane they are all entitled to, and every accident, fatal or otherwise, seriously interferes with his work and the happiness of himself and family. There is nothing sadder than having the breadwinner and head of the family leave home in the morning in a cheerful mood and before night be brought to the morgue a corpse or taken to the hospital a hopeless cripple. Even the smaller accidents are bad. No compensation is paid to an injured man unless he is unable to work for more than ten days. Even though no one is to blame for the accident the suffering and trouble caused exist just the same.

The cost, inconvenience and worry caused employers when these accidents occur must not be overlooked. In addition to the humane side of such occurrences, time is always lost when an accident occurs, in getting the body or badly broken man from the place where he was killed or injured. The general excitement also causes a slackening of work among employees other than those actually engaged in rescue work. If the operator is carrying his compensation policy on an "experience rating basis", any accident will have a tendency to raise his premium rate.

The small leaser is probably in the class that has the hardest time in keeping the mine in a safe operating condition. This does not apply so much to the properties where the company operates all the machinery and furnishes supplies and the labor is done by lessees, under what is known in the Cripple Creek District as "split check" lease, but where several men take the lease and do the furnishing themselves. Money is often scarce in these cases which makes it difficult to keep the property up as it should be, even if the intentions are the very best. "If that stope had not needed so much timber last month I would have been able to pay most of my grocery bill" is the condition in which many a small leaser finds himself. The accident rate is probably no higher in these cases but the prevention is more difficult.

Compensation insurance for mining is high as this class of work is considered dangerous and in recent years weekly benefits to the injured and the doctor and hospital allowances have been increased. The amounts paid to the injured are not at all too high but it has the effect of increasing the cost of Compensation Insurance.

Compensation Insurance is in general carried in one of three ways:

The State Compensation Insurance Fund, private carriers and self insurers.

The State Compensation Insurance Fund is handled by the state and carries the greater part of the compensation insurance in metal mining.

The private carriers handle a small amount of this work.

The self insurers are the ones that carry their own insurance and must have a permit to do so from the State Industrial Commission. All of the insurance is administered by the Industrial Commission.

Recently the insurance carriers have adopted the "experience rating" plan in which the cost of Compensation Insurance is based on the applicant's accident rating for the past five years. This of course can only apply to the larger companies and has proven quite helpful to those with a good record for the preceding five years but not so good for those with poorer records. The base rate for those not on "experience rating" is \$6.81 per hundred of payroll for underground work. This is high but unless the accident rate can be reduced it seems impossible to lower it.

In a general way mine accidents may be put under three classes:

Neglect or inability of the mine operator to furnish proper safety guards and appliances.

Refusal or neglect of employee to use safety guards and appliances.

Accidents classed as "unavoidable".

There seems to be an unfortunate tendency to class accidents as unavoidable when they should not be so designated.

The tables elsewhere in this report give the accident record in considerable detail. To bring the conditions more easily to mind a summary of the number of fatal accidents is given here:

#### NUMBER OF FATAL ACCIDENTS IN MINES AND QUARRIES

1936	1937	1938	1939
27	35	24	19

Non-fatal accidents showed a general decrease in those of a more serious nature while the minor ones (less than 14 days lost time) showed an increase. There were a number of accidents in road work, in the construction of dams, and other work of like nature, but they cannot be classed as mining accidents so are not shown here.

The record shows, as this report goes to press about June 1, that twelve fatal accidents have already occurred in 1940. We must take great care or our fatality record will be higher than in 1939.

A step in the right direction is the fact that within the past year or two a number of the larger companies have employed high class safety engineers.

While fatal accidents are usually considered to be the worst, those which cause total disability are in many cases more dis-

tressing and more expensive. Only one of this class occurred in 1938 and none at all in 1939. In spite of the decrease in fatalities in 1939, there are still many more than there should be and everyone is urged to do his level best to reduce them. The commissioner, inspectors, operators, employees and all others engaged in any way at all in mining, should make a personal effort to achieve this result. A reduction of accidents will eventually tend to make compensation insurance less costly. Mining will be in better form and more interesting to capital; there will be less heartaches and suffering and the entire result will be much better. Let us all take these conditions to heart; do our utmost to put mining on a higher plane, and be fair and right to all concerned.



## FATAL ACCIDENTS

### Underground:

January 2, Julius H. Warner, of Denver, married, mining engineer, employed by G. R. Messick, K. A. Overn and C. S. Hahn, Empire, Clear Creek county, fell into a sump containing scalding water. Mr. Warner died as a result of this accident on February 5. Carelessness of injured.

March 6, Charles McKenna, of Leadville, age 51, married, mucker, employed by the Moraine Mining Company, Lake county, was putting derailed mine car on to track and died from acute dilation of the heart brought on by overexertion and lifting car.

March 12, Hugo Burtell, of Silverton, age 37, married, miner, employed by Shenandoah Dives Mining and Milling Company, San Juan county, was killed when he slipped or fell off a ladder and fell 55 feet down a manway. Violation of safety rule.

March 14, R. L. Francisco, Kokomo, age 42, married, dash blaster, employed by the Climax Molybdenum Company, Lake county, was injured by a hangup as he was putting a shot in a finger raise. He died from injuries April 9. Violation of safety rule.

April 23, Charles W. Hulder, of Kremmling, age 35, married, miner, employed by the Warner Construction Company, Summit county, was killed while loading a hole in the tunnel. In all probability the primer got stuck in the hole and too much force was used with the tamping stick and this caused the explosion.

April 23, Ben F. Covington, of Kremmling, age 22, unmarried, chuck tender, employed by the Warner Construction Company, Summit county, was killed while loading a hole in the tunnel. In all probability the primer got stuck in the hole and too much force was used with the tamping stick and this caused the explosion.

April 28, Arnold J. Kristy, of Telluride, age 28, married, miner, employed by the Veta Mines, Incorporated, San Miguel county, was killed by a premature blast of powder in a winze. Violation of safety rule.

June 25, Alvin De Velbess, of Climax, age 44, widower, whistlepunk, employed by the Climax Molybdenum Company, Lake county, was helping blaster in a drift when a rock fell out of the finger raise crushing his chest. Unavoidable accident.

July 3, John Galvin, of Idaho Springs, age 28, married, machineman, employed by the Phoenix Trail Mining Company, Clear Creek county, was operating a machine drill stoper when he lost control of the machine. The machine struck him, causing injuries from which he died August 11. Unavoidable accident.

July 10, Melvin Ray Goodson, of Central City, age 25, married, laborer, employed by the Warner Construction Company, Summit county, came to his death by taking hold of a steel bar which came in contact with an electric wire charged with 440 volts. Pure carelessness and violation of safety rule.

August 8, Michael Griffin, of Gilman, age 47, unmarried,

shoveler, employed by the Empire Zinc Company, Eagle county, was barring down to make room for a set of timber when a piece of ground slid down the bar causing him to lose his balance. He fell about ten feet and was buried by loose ground. He was lifeless when his head was uncovered some five to seven minutes after the accident happened. Unavoidable accident.

September 24, Jack Mundelein, of Salida, age 31, married, miner, employed by the Burleson Mines, Incorporated, Gunnison county, was crushed by a fall of rock. He died about ten minutes after arriving at the doctor's office. Unavoidable accident.

December 2, Elbert William Daubenspeck, of Ophir, age 49, married, shoveler, employed by the Butterfly Consolidated Mines, San Miguel county, was pushing a loaded car over the opening in the track for the purpose of dumping it. He pushed the car past the opening and stepped back, falling about 200 feet down an incline ore pass. He was killed instantly. Lack of safety devices.

#### **Shaft:**

April 15, Oswald Boschowitzki, of Zurich, Kansas, age 23, unmarried, mucker, employed by Herman Erbert & Associates, Boulder county, fell down a shaft after being knocked from a ladder by a falling bucket. Pure carelessness.

November 11, Robert Mellor, of Central City, age 42, unmarried, miner, employed by George E. Collins and Associates, Gilpin county, was killed by some unknown object falling down shaft and hitting him on the head. He died from injuries November 13. Unavoidable accident.

#### **Surface:**

July 8, Louis Delez, of Montezuma, age 57, unmarried, miner, employed by the Hercules Mining Company, Summit county, was killed by a rail flange which came through a crack in the door of the blacksmith shop after a dynamite explosion. Unavoidable accident.

#### **Mill:**

September 16, F. A. Watson, of Idaho Springs, age 60, unmarried, laborer, employed by the Clear Creek-Gilpin Company, Clear Creek county, was injured while cleaning out classifier tank when he slipped on metal surface striking his right side on the edge. He died from these injuries November 9.

#### **Quarry:**

January 30, Dudley Tremaine, of Fort Collins, age 45, unmarried, locomotive engineer, employed by the Colorado Portland Cement Company, Larimer county, was killed by a powder explosion in a garage belonging to the company. The powder was placed in the garage and was being thawed under the superintendent's direction. Pure carelessness.

January 30, Lorenz Saracino, of Fort Collins, age 48, married, truck driver, employed by the Colorado Portland Cement Company, Larimer county, was killed by a powder explosion in a garage belonging to the company. The powder was placed in the garage and was being thawed under the superintendent's direction. Pure carelessness.

TABLE II

DAYS OF EMPLOYMENT IN AND ABOUT MINES, MILLS AND SMELTERS AND NUMBER OF MEN  
KILLED AND INJURED PER 10,000 DAYS OF EMPLOYMENT DURING THE YEARS 1938 AND 1939

	Days of Employment	Killed				Serious Injury (Time Lost Over 14 Days) 1938				Slight Injury (Time Lost Under 14 Days) 1938			
		1938		1939		1938		1939		1938		1939	
		No. of Acci- dents	Rate Per 10,000 Days	No. of Acci- dents	Rate Per 10,000 Days	No. of Acci- dents	Rate Per 10,000 Days	No. of Acci- dents	Rate Per 10,000 Days	No. of Acci- dents	Rate Per 10,000 Days	No. of Acci- dents	Rate Per 10,000 Days
Underground	1,371,210	24	.1695	15	.1093	359	2.464	311	2.268	494	3.488	587	4.280
Surface	388,496	..	....	1	.0247	75	1.930	66	1.632	125	3.217	140	3.463
Mills	429,783	..	....	1	.0232	27	.7076	27	.6282	45	1.179	44	1.023
Smelters	79,831	..	....	..	....	3	.3387	2	.2505	5	.5645	6	.7515
Quarries	359,396	..	....	2	.0556	15	.5103	24	.6677	14	.4763	29	.8069
Placers	42,624	..	....	..	....	12	2.681	6	1.407	20	4.469	19	4.457

During the year 1939, in addition to the foregoing, the following fatal accidents were reported to the Bureau of Mines: Three on highway excavations, one in W. P. A. excavation near Denver, one on public road driving after mining supplies, one crushed when tearing down old building and one of heart disease in mine hoist room.





SURFACE

23. Mine cars, mine locomotives, or aerial trams.....	..	..	..	1	..	17	10	20	16
24. Railway cars and locomotives.....	..	..	..	..	..	..	..	1	1
25. Run or fall of ore in or from ore bins.....	..	..	..	..	..	3	6	5	6
26. Falls of persons.....	..	..	..	..	..	14	13	21	33
27. Stepping on nail.....	..	..	..	..	..	..	1	10	5
28. Hand tools.....	..	..	..	..	1	2	5	2	22
29. Electricity .....	..	..	..	..	..	2	1	4	9
30. Machinery .....	..	..	..	1	3	12	4	18	12
31. Handling materials.....	1	..	..	1	1	15	17	25	25
32. Other causes.....	..	..	..	..	..	7	4	19	11
Total .....	1	..	..	3	5	72	61	125	140

ORE-DRESSING AND MILLING

1. Haulage (cars and motors).....	..	..	..	..	..	1	1	..	2
2. Railway cars or locomotives.....	..	..	..	..	..	..	..	..	..
3. Crushers, rolls, or stamps.....	..	..	..	1	..	1	3	5	1
4. Tables, jigs, etc.....	..	..	..	..	..	..	..	..	1
5. Other machinery.....	..	..	..	..	..	10	4	7	6
6. Falls of persons.....	1	..	..	..	..	3	4	5	5
7. Suffocation in ore bins.....	..	..	..	..	..	..	..	..	..
8. Falling objects (rocks, timbers, etc.).....	..	..	..	..	..	2	..	4	6
9. Cyanide or other poisoning.....	..	..	..	..	..	..	..	3	..
10. Scalding (steam or water).....	..	..	..	..	..	..	..	..	1
11. Electricity .....	..	..	..	..	..	..	..	1	1
12. Hand tools.....	..	..	..	..	..	..	..	1	1
13. Stepping on nail.....	..	..	..	..	..	2	1	4	1
14. Flying pieces of rock from sledging or crushing.....	..	..	..	..	..	..	..	2	..
15a. Handling materials.....	..	..	..	1	..	1	..	1	1
15b. Other causes.....	..	..	..	..	..	1	1	5	3
Total .....	1	..	..	2	..	21	15	38	30



38. Machinery .....	..	..	..	..	..	2	2	1
39. Failure of ladder, scaffold, or other support.....	..	..	..	..	..	..	..	..
40. Handling hot materials.....	..	..	..	..	..	1	2	..
41a. Handling other materials.....	..	..	..	..	1	2	1	2
41b. Other causes.....	..	..	..	..	..	..	..	..
Total .....	..	..	..	..	5	12	9	14

## PLACER MINES—DREDGING

1. Machinery .....	..	..	..	..	7	2	7	4
2. Electricity .....	..	..	..	..	..	..	..	..
3. Boiler explosion .....	..	..	..	..	..	..	..	..
4. Haulage .....	..	..	..	..	..	..	..	2
5. Falls of persons.....	..	..	..	..	1	1	4	4
6. Hand tools.....	..	..	..	..	1	..	3	3
7. Fall of rock.....	..	..	..	..	..	1	..	5
8. Other causes.....	..	..	..	..	3	2	6	1
Total .....	..	..	..	..	12	6	20	19

## UNDERGROUND QUARRY

1. Fall of rock from roof or wall.....	..	..	..	..	2	1	2	3
2. Rock while loading at working face or chute.....	..	..	..	..	..	4	..	1
3. Hand tools.....	..	..	..	..	..	2	..	1
4. Explosives .....	..	..	..	..	..	..	..	1
5. Haulage .....	..	..	..	..	..	..	..	1
6. Falling down chute, winze, raise, or stope.....	..	..	..	..	..	..	..	1
7. Run of rock from chute or pocket.....	..	..	..	..	..	..	..	..
8. Drilling .....	..	..	..	..	..	1	1	..
9. Electricity .....	..	..	..	..	..	..	..	1
10. Machinery (other than locomotives or drills).....	..	..	..	..	..	..	..	..
11. Mine fires.....	..	..	..	..	..	..	..	1
12. Suffocation from natural gases.....	..	..	..	..	..	..	..	..
13. Inrush of water.....	..	..	..	..	..	..	..	..
14. Stepping on nails, etc.....	..	..	..	..	..	..	..	..
15. Handling materials (other than rock).....	..	..	..	..	..	..	..	..
16. Other causes.....	..	..	..	..	..	..	..	..
Total .....	..	..	..	..	9	7	2	10

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1938 AND 1939—Continued

	Fatal		Permanent Total Disability		Permanent Partial Disability		Temporary Disability		Slight Injuries (Time lost under 14 days)	
	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939
OUTSIDE WORKS										
17. Haulage .....	..	..	..	..	..	..	2	1	2	4
18. Machinery .....	..	..	..	..	..	..	1	1	..	1
19. Cranes, derricks, etc.....	..	..	..	..	..	..	1	1	1	..
20. Hand tools.....	..	..	..	..	..	..	1	..	1	..
21. Stepping on nails, etc.....	..	..	..	..	..	..	..	..	1	..
22. Electricity .....	..	..	..	..	..	..	..	..	..	..
23. Falls of persons.....	..	..	..	..	..	..	2	..	1	2
24. Falling objects (rocks, etc.).....	..	..	..	..	..	..	..	3	2	..
25. Flying objects (rocks).....	..	..	..	..	..	..	3	2	2	..
26. Handling materials (rock, etc.).....	..	..	..	..	..	..	1	6	2	1
27. Burns .....	..	..	..	..	1	..	..	1	..	..
28. Explosives .....	..	2	..	..	..	..	..	1	..	11
29. Other causes.....	..	..	..	..	..	..	2	..	..	..
Total .....	—	2	—	..	—	1	13	16	—	19







## SURFACE ACCIDENTS

[illegible]

## MILLS

[illegible]





[illegible]

## AUXILIARY WORKS

31.	Haulage (cars and motors).....	..	..	..	..	..	..
32.	Railway cars or locomotives.....	..	..	..	..	..	..
33.	Falls of persons.....	..	..	..	..	..	..
34.	Falling objects (rocks, timbers, etc.).....	..	..	..	..	..	..
35.	Stepping on nail.....	..	..	..	..	..	..
36.	Hand tools.....	..	..	..	..	..	..
37.	Electricity .....	..	..	..	..	..	..
38.	Machinery .....	..	..	..	..	..	..
39.	Failure of ladder, scaffold, or other support.....	..	..	..	..	..	..
40.	Handling hot materials.....	..	..	..	..	..	..
41a.	Handling other materials.....	..	..	..	..	..	..
41b.	Other causes.....	..	..	..	..	..	..
	Total .....	—	—	—	—	—	—

## QUARRIES AND CLAY PITS

[illegible]



PLACERS AND DREDGES									
		Miners		Laborers		Dredgemen			
		1938	1939	1938	1939	1938	1939	1938	1939
27.	Burns .....	..	..	..	..	..	..	..	..
28.	Explosives .....	..	1	..	..	..	..	..	..
29.	Other causes.....	..	..	..	..	..	..	..	..
	Total .....	—	—	—	—	—	—	—	—
	Total .....	..	1	..	..	..	..	..	..

## PLACERS AND DREDGES



## LIST OF OPERATING MINES IN VARIOUS COUNTIES IN COLORADO

## OPERATING MINES IN BOULDER COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alice	Jamestown	Bergheim, Milton and Marks	Jamestown, Colorado	Gold, Silver
Alpine	Sugarloaf	L. E. and Phil Ward	Ward	Gold, Silver
American	Magnolia	J. L. Peterson	Boulder	Gold
Amy Paul (a)	Eldora	J. B. Kennedy and Associates	Eldora	Gold, Silver
Anchor (a)	Nederland	J. V. Lintner and J. E. Maclean	1248 York Street, Denver, 203	Gold, Silver
Argo and Buckhorn	Jamestown	Boulder Fluorspar and Radium Co.	c/o Frank W. Becraft	Gold
Atchison and Eldorado	Gold Hill	J. H. Leippe	Cooper Building, Denver	Gold
B and M (m)	Ward	Kissell and Associates	Second and Franklin, Reading, Pa.	Gold, Silver
Ben C. Lowell (a)	Boulder	The Colorado Mining Company	Ward	Gold, Silver
Betsy Babbitt	Gold Hill	S. C. Miller	941 Gas & Electric Building, Denver	Gold
Big Five (a)	Ward	The Jennie Wren Mines Incorporated	2333 Thirteenth Street, Boulder	Gold, Silver
Black Bird (a)	Boulder	Archer Mines and Development Company	2226 Krameria Street, Denver	Gold, Silver (c)
Black Cloud	Gold Hill	Henry Johnson	Apt. 12, 2121 Twelfth Street, Boulder	Gold, Silver
Black Rose and Yellow Rose	Jamestown	Fred and Will Dopp	Nunn	Gold, Silver
Boulder Valley Group	Gold Hill	Mrs. Agnes K. Gilbert	Jamestown	Gold, Silver
Boston (a)	Ward	Pearl and Sverdfeger	605 13th Street, Boulder	Gold, Silver
Buena Ventura	Ward	Buena Ventura M. D. T. & T. Co.	Ward	Gold, Silver
Caledonia	Jamestown	Henry J. Ernest	507 Boston Building, Denver	Gold, Silver
Cash (a)	Boulder	Newell Lease, c/o L. A. Newell	Jamestown	Gold
Chingis Kahn and Poorman	Boulder	J. G. Clark and E. F. Green	Magnolia Star Route, Boulder	Gold, Silver
Cold Springs Group	Gold Hill	Gold Hill Mining Company	940 Tenth Street, Boulder	Gold, Silver
Columbus (a)	Gold Hill	Sea-Colo Corporation	c/o W. F. Robinson, 612 First National Bank Building, Denver	Gold, Silver
Concord	Sugarloaf	Metals Production Company	1907 West 73d Street, Seattle	Gold, Silver
Conger (m)	Nederland	Vanadium Corporation of America	Washington Twelfth Street, Boulder	Gold
Cross (a)	Nederland	The Cross Gold Mining Company	National State Bank Building, Boulder	Tungsten
Dolly No. 1	Gold Hill	C. L. Lee and M. Gunn	No. 1 Temple Building, Boulder	Gold, Silver
East Boston	Ward	Ward United Mines Company	Gold Hill	Gold, Silver
Emancipation	Boulder	Samuel Wright	1437 Clayton Street, Denver	Gold, Silver
Emerson	Sugarloaf	Mrs. E. S. Knowlton	Crisman Star Route, Boulder	Gold, Silver
Empress	Boulder	E. K. Henderson and H. R. Sisson	E. 322 21st Avenue, Spokane, Washington	Gold, Silver
Eureka (m)	Boulder	Eureka Tungsten Company	1563 Mapleton Street, Boulder	Gold, Silver
			1039 Maxwell Street, Boulder	Tungsten



Evening Star.....	Gold Hill.....	O. F. Barber, Est.	c/o F. C. Booton, Boulder.....	Gold
Fisk.....	Gold Hill.....	M. C. Riley.....	Boulder.....	Gold
Forest.....	Sugarloaf.....	Allen Smothers.....	Boulder.....	Gold
Fortune.....	Boulder.....	Magnolia Mines Associates Co.	Sandpoint, Idaho.....	Gold, Silver
Fortune No. 2 (a).....	Boulder.....	D. W. Schmitt.....	Box 470, Boulder.....	Gold, Silver (c)
Franklin Number One (a).....	Boulder.....	William Gibson and Associates.....	Salina Star Route, Boulder.....	Gold, Silver
Franklin Number Five (a).....	Boulder.....	Robert Pherson and Associates.....	Salina Star Route, Boulder.....	Gold, Silver
Gold Leaf.....	Jamestown.....	H. E. Rhoades.....	Jamestown.....	Gold
Golden Age.....	Jamestown.....	Richmont Gold Mining Company.....	Boulder.....	Gold
Golden Harp.....	Boulder.....	Golden Harp Mining and Milling Syndicate.....	343 North Ashland Avenue, La Grange, Illinois.....	Gold, Silver
Golden Queen.....	Ward.....	Chicago Golden Queen Mining Co.	Ward.....	Gold, Silver
Good Friday (a) (m).....	Sugarloaf.....	G. W. Retallack, E. K. Henderson and Wm. J. Mackenzie.....	915 University Avenue, Boulder, Tungsten	Gold, Silver
Grand Republic (a).....	Boulder.....	J. G. Clark.....	940 Tenth Street, Boulder.....	Gold, Silver
Grand View (a).....	Ward.....	McCoy, Peart and Swerdfefer.....	Gold Hill.....	Gold
Grant.....	Gold Hill.....	W. H. Cowdry.....	610 Arapahoe Street, Boulder.....	Gold, Silver (c)
Graphic (a).....	Boulder.....	Clyde F. Lowrey.....	U. S. National Bank Building, Denver.....	Gold, Silver
Great Britain and Lucky Star.....	Gold Hill.....	H. M. Williamson.....	Jamestown.....	Gold, Silver
Grey Eagle.....	Jamestown.....	Joe Haedel.....	Boulder.....	Gold, Silver
Hawkeye.....	Gold Hill.....	A. W. Fitzgerald, Agent.....	Ward.....	Gold, Silver
Helen B.....	Ward.....	Geo. Chapman.....	Box 470, Boulder.....	Gold
Homestead (a).....	Sugarloaf.....	Homestead Mining Company.....	Ward.....	Gold, Silver
Idaho (a).....	Ward.....	W. H. Grant and Associate.....	First National Bank Building, Boulder.....	Gold, Silver
Illinois (m).....	Nederland.....	The Wolf Tongue Mining Company.....	310 First National Bank Building, Boulder.....	Tungsten
India.....	Magnolia.....	E. F. Yates.....	200 National Bank Building, Boulder.....	Gold
Ingram (a) (m).....	Boulder.....	Mining Associates, Inc.....	609 Cooper Building, Denver.....	Gold, Silver
John Jay (m).....	Jamestown.....	Associated Metal Mines, Inc.....	1921 Walnut Street, Boulder.....	Gold, Silver
Keystone (a) (m).....	Boulder.....	Clifford A. Staley and Associate.....	2333 Thirteenth Street, Boulder, Gold, Silver	Gold, Silver
King Group.....	Gold Hill.....	S. C. Miller.....	1424 Pine Street, Boulder.....	Gold, Silver
King Wilhelm (a).....	Jamestown.....	Herman Eriert and Associate.....	Nederland.....	Tungsten
Last Chance (m).....	Nederland.....	Thomas M. Walsh and Son.....	1610 24th Street, Boulder.....	Gold, Silver
Little Johnnie (a).....	Boulder.....	Roy Petterson and Associates.....	Box 470, Boulder.....	Gold, Silver (c)
Livingston (a).....	Sugarloaf.....	D. W. Schmitt.....	First National Bank Building, Boulder.....	Gold, Silver
Logan (a).....	Boulder.....	Logan Mining and Milling Company.....	Box 296, Boulder.....	Tungsten
Lucky Two, Barker, Peewink and Eureka (m).....	Boulder.....	Gold, Silver and Tungsten Inc.....	Boulder.....	Tungsten
Mack.....	Gold Hill.....	Chas. W. V. Felgel.....	Nederland.....	Tungsten
Mammoth (m).....	Nederland.....	W. L. Tanner.....	663 Concord, Boulder.....	Gold, Silver (c)
Melvina (a).....	Boulder.....	Paul Maurer, H. M. Gregory and E. H. Wilson.....	Eldora.....	Gold, Silver
Mogul (a).....	Eldora.....	Robert Boyd and James B. Worth.....	Jamestown.....	Gold, Silver
Moulton.....	Jamestown.....	Jess A. Vickery.....		

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN BOULDER COUNTY, 1939—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Myrtle	Gold Hill.	D. S. Clark.	Boulder	Gold
Nancy	Boulder	A. H. Scruggs and Associate.	621 Pine Street, Boulder	Silver
New Discovery	Gold Hill.	Dr. M. Jean Gale.	Republic Building, Denver	Gold
New York	Gold Hill.	{ Gordon Herman. Mrs. L. T. Bough.	Albany Hotel, Boulder	Gold
Nil Desperandum	Gold Hill.	S. M. Walker, Lessee.	736 Washington Street, Denver	Gold
Orphan Boy (a) (m)	Boulder	More Minerals Mining and Milling Co.	Wallstreet Star Route, Boulder	Silver
Pandora (a)	Nederland	Pandora Metals Inc.	220 E. and C Building, Denver	Gold
Plowboy	Gold Hill.	Gus Pullos Estate.	c/o A. B. Pace, 2213 Pine Street, Boulder	Gold, Silver
Poorman	Magnolia	R. H. Dawson.	Medicine Lodge, Kansas	Gold, Silver
Recluse	Sugarloaf	A. W. Fitzgerald.	Box 43, Boulder	Gold
Red Signe	Boulder	C. V. Simpkins.	Boulder	Gold, Silver
Red Spruce	Gold Hill.	C. H. Clark.	Boulder	Gold, Silver
Richmond	Gold Hill.	Richmond Mining Company.	c/o Earl M. LeVeque, 720 Mapleton, Boulder	Gold
Rip Van Dam	Jamestown	Michael J. Gibbons.	c/o John R. Wolff, Boulder	Gold
Rose	Ward	{ Hard Rock Mining Company. Ward Rose Mining Company.	{ C. F. Ober, Trustee, Ward. radio Springs.	Gold, Silver
Sac and Fox.	Magnolia	Erma E. Gilfillen.	318 E. Caramillo Street, Colorado Springs.	Gold
Saint Joe.	Gold Hill.	St. Joe Mining & Milling Co.	c/o A. A. Zangara, Boulder	Gold, Silver
Saint Louis (a) (m)	Nederland	Geo. D. Hilding.	1648 Washington Street, Denver	Gold, Silver
Scotia	Gold Hill.	W. H. Cowdery.	Gold Hill	Gold, Silver
Senator Hill	Boulder	The Colorado Mining Company	941 G. & E. Building, Denver	Gold, Silver
Silver Harp	Gold Hill	C. A. Wolcott.	Boulder	Gold
Slide (m)	Gold Hill.	The Slide Mines, Inc.	420 Security Building, Denver	Gold, Silver
Sparkling Jewel	Sugarloaf	Chas. A. Wolcott.	Boulder	Gold
Sun and Moon	Gold Hill.	Mrs. Alice B. Coffman.	202 W. Pershing Boulevard, Cheyenne, Wyoming	Gold, Silver
Sunday and Rambler (a) (m)	Nederland	Thomas Walsh.	Nederland	Tungsten (c)
Sunny View (a)	Ward	R. L. King, C. F. King and H. F. Thatcher	21 Maple Avenue, Reidsville, North Carolina.	Gold, Silver (c)
Sunshine (m)	Boulder	Mining Associates, Inc.	200 National Bank Building, Boulder	Gold, Silver
Sussex (a)	Boulder	Richmond Mining Company.	1450 Williams Street, Denver	Gold, Silver
Tambourine	Sugarloaf	H. M. Gregory.	2440 Eighth Street, Boulder	Gold
Tammany	Gold Hill.	Nello Clari and John Brennan.	1108 Acoma Street, Denver	Gold, Silver
Trombo	Gold Hill.	Alex. McClellan.	Boulder	Gold
United Empire.	Gold Hill.	M. S. Brandt.	Box 298, Boulder	Gold
Valley Forge.	Gold Hill.	c/o H. E. Barney, Agent.	415 Third Street, N. W., Payallup, Washington	Gold
Vasco	Tungsten	Gold, Silver & Tungsten, Inc.	Box 296, Boulder	Tungsten

Wa-Ba-Na .....	Gold Hill.....	John Plane.....	Gold Hill.....	Gold
Wano (m) .....	Jamestown .....	H. M. Williamson.....	327 U. S. Nat'l Bank, Denver.....	Gold, Silver
Ward .....	Gold Hill.....	Colorado Gold and Silver Trust.....	Gold Hill.....	Gold, Silver
Washington and Phil Sheridan.....	Gold Hill.....	C. H. Clark.....	Boulder.....	Gold, Silver
Wood Mountain (a) (m).....	Boulder.....	Gold, Silver & Tungsten, Inc.....	940 Tenth Street, Boulder.....	Gold, Silver
Yellow Jacket (a).....	Sugarloaf .....	C. H. Craig.....	1107 Tenth Street, Boulder.....	Gold
Yellow Pine.....	Sugarloaf .....	Yellow Pine Mines and Reduction Company, E. B. Held, Jr., and R. L. Pherson.....	1219 Spruce Street, Boulder.....	Gold, Silver

## OPERATING MINES IN CHAFFEE COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Allie Bell (a).....	St. Elmo.....	Allie Bell Mining and Milling Company.....	1010 University Denver	Gold, Silver, Lead Zinc
Big Chief.....	Monarch .....	Victory Mining Company.....	Buena Vista, Colorado.....	Gold
Colorado Fluorspar Corporation.....	Salida .....	Colorado Fluorspar Corporation.....	Salida .....	Fluorspar
Garfield .....	Monarch .....	Bratton & Finley.....	Garfield .....	Gold, Silver
Granite Tunnel.....	Granite .....	C. H. Steinner.....	Granite .....	Gold, Silver
Hawkeye No. 3.....	Monarch .....	Hawkeye Mines.....	Salida .....	Silver, Lead
Hill Top (a).....	Salida .....	Chaffee County Fluorspar Corporation.....	Salida .....	Fluorspar
Lilly .....	Monarch .....	George S. Daniel.....	350 F. Street, Salida .....	Gold, Silver
Mary Murphy .....	St. Elmo.....	M. K. McIver.....	St. Elmo.....	Gold, Silver, Lead
Monongahela and Fraction.....	Monarch .....	Emil Becker.....	Turret .....	Gold
Ohto and Morning Star.....	Monarch .....	Philip Carey Mining and Milling Co., c/o P. L. Carey, Monarch.....	Monarch .....	Gold, Silver
Stonewall .....	Hancock .....	Stonewall Leasing Company.....	Salida .....	Silver, Lead, Zinc

## OPERATING MINES IN CLEAR CREEK COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Atlantic & Rifle (m) .....	Empire .....	.....	Empire .....	Gold, Silver
Beard Creek, etc.....	Empire .....	A. F. Mayhan.....	Idaho Springs.....	Gold, Silver, Copper, Lead, Zinc
Bald Eagle (a) (m).....	Idaho Springs.....	Colorado Silver Mines, Inc.....	Box 5008 Terminal Station, Denver	Gold, Silver, Lead
Blind Pump.....	Idaho Springs.....	Joseph P. Ruth.....	425 Continental Oil Building, Denver	Gold, Silver
Bride .....	Idaho Springs.....	Mark Snodgrass and Associates.....	1722 Arapahoe Street, Denver.....	Gold, Silver, Lead

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN CLEAR CREEK COUNTY, 1939—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Capitol Prize (a)	Georgetown	Griffith Leasing Company	Georgetown	Gold, Silver
Cardigan	Idaho Springs	Orlando Mining Company	859 Lincoln Street, Canon City	Gold, Silver
Castleton (a)	Idaho Springs	Gerald F. Hall and Claude L. Bean	Idaho Springs	Gold, Silver
Clear Creek and Gilpin (a)	Dumont	Clear Creek Consolidated Mining Company	Box 246, Idaho Springs	Gold, Silver, Copper
Coming Nation	Idaho Springs	Sid Varney	Idaho Springs	Gold, Silver
Commonwealth	Georgetown	Silver Cycle Leasing Company	1733 Marion Street, Denver	Gold, Silver, Lead
Conqueror	Empire	J. L. Williamson and Associates	Empire	Gold, Silver
Diamond Joe (a)	Idaho Springs	Alma Lincoln Mining Company	Idaho Springs	Gold, Silver
Diamond Mountain	Idaho Springs	Clyde Campbell	412 Empire Building, Denver	Gold, Silver
Dixie	Idaho Springs	Giles and Company	4663 Humboldt Street, Denver	Gold, Silver
Eagle (a)	Dumont	Eagle Gold Mines, Inc.	3466 West 32nd Avenue, Denver	Gold, Silver (c)
Earl of Kent	Dumont	Charles B. Myers	Dumont	Gold, Silver, Lead
Edwards	Idaho Springs	Homestake Le Roy Mining Company	615 California Building, Denver	Gold, Silver, Copper, Lead, Zinc
Elliott, Barber and Lincoln (m)	Idaho Springs	Alma Lincoln Mining Company	Idaho Springs	Gold, Silver
Franklin	Idaho Springs	Geo. L. Calloway	Idaho Springs	Gold, Silver
Freeland Extension	Idaho Springs	General Mining Corporation	Idaho Springs	Gold, Silver
Freighter's Friend, Gem, etc.	Idaho Springs	Fred G. Walsen, Agent	5609 E. 17th Avenue, Denver	Gold, Silver, Copper, Lead, Zinc
Gold Bug (a)	Empire	Gold Bug Mines, Inc.	1079 Santa Fe Drive, Denver	Gold, Silver
Gold Dirt	Empire	I. B. Melville	99 South Downing Street, Denver	Gold, Silver
Gold Fissure	Empire	Messrs. Kock and Bristol	Empire	Gold, Silver
Gold King	Idaho Springs	Mark Moore and Regnold Moore	Idaho Springs	Gold, Silver
Golden Edge	Idaho Springs	Mollard and Company	Idaho Springs	Gold, Silver
Golden Piece	Idaho Springs	Clarence Puls	Idaho Springs	Gold, Silver
Golden Rod	Dumont	C. W. Carstarphen	3466 W. 32nd Avenue, Denver	Gold, Silver, Copper, Lead
Griffith	Georgetown	J. N. O'Connor	1717 Stout Street, Denver	Gold, Silver
Kangaroo	Idaho Springs	Seaton-Hayden Mining Corp.	504 Mercantile Building, Denver	Gold, Silver, Copper, Lead, Zinc
Lamartine (a) (m)	Idaho Springs	Lamartine Mines, Inc.	Idaho Springs	Gold, Silver
Lebanon Mine and Dump	Georgetown	George Rowe and Associates	Silver Plume	Gold, Silver
Little Champion (a)	Idaho Springs	Robert W. Hume and Associates	Idaho Springs	Gold, Silver
Lotus Tree (a)	Idaho Springs	H. J. Thraynor	Idaho Springs	Gold, Silver
Lord Byron	Idaho Springs	Niagara Leasing Pool	Idaho Springs	Gold, Silver, Copper, Lead, Zinc
McClelland (m)	Idaho Springs	General Mining Corporation	Idaho Springs	Gold, Silver
Marry (a)	Idaho Springs	Hopkins Gold Development Company	Idaho Springs	Gold, Silver (c)
Mattie	Idaho Springs	Mattie Consolidated Mines, Inc.	Idaho Springs	Gold, Silver, Lead



Mendie (a).....	Idaho Springs.....	Hopkins Gold Development Company.....	Idaho Springs.....	Gold	Silver, Copper
Metropolitan.....	Idaho Springs.....	John B. Furstenberg.....	Denver.....	Gold	Silver, Copper
Miller Tunnel.....	Idaho Springs.....	J. C. Colsman, Agent.....	Idaho Springs.....	Gold, Silver, Copper, Lead, Zinc	
Milton.....	Dumont.....	Keystone Mining Company.....	Dumont.....	Gold, Silver, Copper, Lead, Zinc	
Mint.....	Empire.....	Coffman Bros.....	Empire.....	Gold, Silver	
Mix.....	Idaho Springs.....	The Hi-Low Mining Company.....	Idaho Springs.....	Gold, Silver, Copper, Lead, Zinc	
Oneida.....	Dumont.....	Bert Trembath.....	Idaho Springs.....	Gold, Silver, Copper, Lead	
Phoenix (m).....	Idaho Springs.....	G. W. Gunderson and J. G. Heinrich.....	Idaho Springs.....	Gold, Silver	
Pulaski and Crown Point.....	Silver Plume.....	James T. Garrett.....	Silver Plume.....	Gold, Silver	
Red Elephant.....	Lawson.....	Z. G. Stechlin and Associates.....	Wood River, Illinois.....	Gold, Silver, Lead	
Red Jacket and Patton.....	Idaho Springs.....	Mark M. Moore.....	Drawer 386, Idaho Springs.....	Gold, Silver	
Redstone and Blackstone (a).....	Empire.....	United States Molybdenum Company.....	Box 5008, Terminal Station Denver.....	Molybdenum (c)	
Reynolds (a).....	Idaho Springs.....	Glacier Gold Mining Company.....	Idaho Springs.....	Gold, Silver	
San Juan (a) (m).....	Idaho Springs.....	Beach Brothers.....	Idaho Springs.....	Gold, Silver	
Shafter.....	Idaho Springs.....	C. O. Withrow.....	1726 Krameria Street, Denver.....	Gold, Silver	
Sill (a).....	Shawnee.....	Twin Basin Mining and Milling Company.....	U. S. National Bank Building, Denver.....	Gold, Silver, Zinc	
Silver Age.....	Idaho Springs.....	Calloway, Roller and Company.....	Idaho Springs.....	Gold, Silver, Lead, Zinc	
Specie Payment.....	Idaho Springs.....	Specie Mining Company.....	1901 Lawrence Street, Denver.....	Gold, Silver, Copper, Lead, Zinc	
Standard.....	Idaho Springs.....	Standard Mines Co.....	Idaho Springs.....	Gold, Silver, Copper, Lead, Zinc	
Stanley.....	Idaho Springs.....	Edgar Neville.....	Idaho Springs.....	Gold, Silver, Copper, Lead, Zinc	
Stephens.....	Idaho Springs.....	Chris E. Erickson.....	Idaho Springs.....	Gold, Silver, Lead, Copper	
Turner.....	Idaho Springs.....	Mike Evans and Associates.....	Idaho Springs.....	Gold, Silver	
Upper Santa Fe.....	Georgetown.....	J. R. Campbell and Associates.....	Georgetown.....	Gold, Silver, Lead	
West Santa Fe.....	Idaho Springs.....	Santa Fe Mines Corporation.....	Idaho Springs.....	Gold, Silver	
Wheatland (a).....	Idaho Springs.....	Charles Gresser.....	Maryland Hotel, St. Louis, Mo.....	Gold, Silver	
Williams.....	Idaho Springs.....	E. W. Westwood.....	1900 Koslyn Street, Denver.....	Gold, Silver	

# OPERATING MINES IN CONEJOS COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Forest King (a).....	Platono.....	Cardinal Gold Mining Company.....	Platono.....	Gold, Silver (c)
Valley Queen (a).....	Platono.....	Platono Gold Mines, Inc.....	Platono.....	Gold, Silver (c)

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.



## OPERATING MINES IN CUSTER COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Akin (a) (m).....	Ophir Creek.....	Charles Akin and Ralph Decker.....	Westmore	Gold (c)
Barrel Springs (a) (m).....	Ilse.....	Colorado Barite Company.....	Box 133, Canon City.....	Barite
Bassick (a).....	Querida.....	Frank Gay.....	Querida.....	Gold, Silver, Lead (c)
Dixie Claim (a).....	Ophir Creek.....	Louis Camerlo.....	417 Kopfer Place, Florence.....	Gold
Defender.....	Silver Cliff.....	H. R. Hemming and E. C. Stroehlike.....	Silver Cliff.....	Silver, Lead
Franklin.....	Ilse.....	Roy B. and Elsie H. Ellis.....	Box 502, West Monument, Colorado Springs.....	Barite, Gold, Silver, Lead, Copper
Gold King and Gold Queen (a).....	Ophir Creek.....	W. I. Looney, Joe Borelli and Frank Madonna.....	1230 West Third, Florence.....	Gold (c)
J. B. Putnam.....	Rosita.....	Richard R. Pool.....	Westcliffe.....	Gold, Silver, Lead
Leddy Barite (a).....	Ilse.....	Colorado Barite Company.....	Box 133, Canon City.....	Barite
Little Annie (a).....	Rosita.....	John J. Budzak.....	Pueblo.....	Silver, Lead (c)
Maine No. 2 (a).....	Querida.....	Richard R. Pool.....	Westcliffe.....	Silver, Lead
Nemaha (a).....	Querida.....	F. M. Shore.....	112 West Abriendo Avenue, Pueblo.....	Gold, Silver, Lead
Vulcan (a).....	Querida.....	Southern Colorado Mining Company.....	4858 Kenmore Avenue, Chicago, Illinois.....	Gold, Silver, Lead (c)
Womack (a).....	Querida.....	Harry O. Womack.....	Silver Cliff.....	Silver, Lead (c)

## OPERATING MINES IN DOLORES COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Gold Anchor.....	Rico.....	Mrs. A. F. Day.....	Box 515, Rico.....	Silver, Copper, Lead
Hicks.....	Rico.....	George S. Hicks.....	Box 696, Rico.....	Gold, Silver, Lead, Zinc
Lexington Tunnel (a).....	Rico.....	Pelleyre Mining and Milling Company.....	818 Kearns Building, Salt Lake City, Utah.....	Gold, Silver, Lead, Copper, Zinc
Pigeon.....	Rico.....	C. O. Waterman.....	Rico.....	Gold, Silver, Lead, Copper, Zinc
Rico Argentine (m).....	Rico.....	Rico Argentine Mining Company.....	132 South Main Street, Salt Lake City, Utah.....	Gold, Silver, Copper, Lead, Zinc
St. Louis Tunnel (a).....	Rico.....	St. Louis Smelting & Refining Company.....	722 Chestnut Street, St. Louis, Missouri.....	Gold, Silver, Lead, Copper, Zinc

Vulcan, etc.	Rico	K. L. Erickson and McFarland	Rico	Gold, Silver, Copper, Lead
	Rico	Markey Brothers	Rico	Gold, Silver, Lead, Zinc

## OPERATING MINES IN EAGLE COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Ben Butler	Belden Canon	Ben Butler Mining Corporation	Minturn	Gold, Silver, Copper
Betty and Monument	Belden Canon	Dan J. Curran	Redcliff	Gold, Silver
Cora Claim	Belden Canon	A. J. Clooney	Redcliff	Gold
Eagle Mines (m)	Gilman	{ New Jersey Zinc Company	160 First Street, New York City	Gold
Golden Comet, etc.	Redcliff	{ A. L. Moore,	Redcliff	Gold, Silver, Copper, Lead, Zinc
Groundhog	Redcliff	Price Mining Syndicate,	208 N. Broadway, St. Louis, Mo.	Gold, Silver, Copper
Star of the West	Belden Canon	Groundhog Tunnel & Mining Co.	c/o T. C. Cobb, First National Bank Building, Denver	Gold, Silver
Tip Top	Belden Canon	C. A. Dewitt	Redcliff	Gold, Silver
	Belden Canon	J. L. Martin	Box 312, Redcliff	Gold, Silver

## OPERATING MINES IN FREMONT COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Green Lode 1, 2, 3 (a)	Cotopaxi	William A. Hoge and Associates	Hillside	Gold, Silver, Copper (c)
Little Rose	Salida	George Corlie	315 West Fifth Street, Salida	Gold
Morning Star	Parkdale	H. I. Grimes	1910 First National Bank Building, Oklahoma City, Oklahoma	Copper, Vermiculite (c)

## OPERATING MINES IN GARFIELD COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Grey Eagle	New Castle	John E. Anderson	New Castle	Gold, Silver

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN GILPIN COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Banner No. 2	Russell Gulch	Charles A. Wagner	Russell Gulch	Gold
Becker Bates (a)	Central City	Thayer Gold Mines Corporation	Central City	Gold, Silver (c)
Champion	Blackhawk	Champion Mining Company, c/o E. L. Balbach	Blackhawk	Gold, Silver
Chase	Russell Gulch	Chase Mining Company	c/o Mabel Willis, Central City	Gold, Silver, Lead
Clay County (m)	Central City	Gold Ridge Mining Company	1163 Washington Street, Denver	Gold, Silver
Coeur d'Alene (a)	Central City	Coeur d'Alene Mining Company	Central City	Gold, Silver (c)
Colorado Carr (a)	Idaho Springs	The California-Hidden Treasure Mines Company	307 Boston Building, Denver	Gold, Silver
Continental (a) (m)	Central City	Continental Mining Company, Inc.	Box 155, Central City	Gold, Silver, Copper
Cooper	Russell Gulch	P. L. Laird	Central City	Gold, Silver
Druid	Russell Gulch	L. M. Ellsperman and Hans Wulff	Kenmark Hotel, Denver	Gold, Silver
Dirigo	Rollinsville	Dirigo Mining Company and Dahlgman Leasing Company	Rollinsville	Gold, Silver, Lead, Zinc
Divide	Rollinsville	Pearl Querce	2914 West 29th Avenue, Denver	Gold
Falcon	Rollinsville	Gus Grutzmacher	Central City	Gold, Silver
Federal (a)	Russell Gulch	R. I. Hughes and J. W. Farris	Arvada	Gold, Silver
Frontenac	Russell Gulch	Frontenac, Inc.	564 South Ogden Street, Denver	Gold, Silver (c)
Glendale (a) (m)	Rollinsville	J. E. Phillips and Sons	Rollinsville	Gold, Silver
Gold Dirt (m)	Rollinsville	Tip Top Gold Mines, Inc.	631 Denham Building, Denver	Gold, Silver
Gold Lode	Russell Gulch	R. H. Hasty	2090 Birch Street, Denver	Gold
Golden Dollar (a)	Russell Gulch	Cormichyr Mining Company	2527 Albion Street, Denver	Gold, Silver (c)
Granite (a)	Central City	Phil Cieloha	General Delivery, Central City	Gold, Silver, Copper
Iowa	Russell Gulch	Ella D. Atkins	1705 Franklin Street, Denver	Gold, Silver
Iron	Russell Gulch	Fred Frey and D. D. Hambley	Russell Gulch	Gold, Silver
Justice	Blackhawk	Eckers and Company	Blackhawk	Gold, Silver, Copper, Lead
Kirk (a)	Central City	E. L. Cull and Associates	Blackhawk	Gold, Silver
Leidinger	Central City	J. W. Leidinger	Central City	Gold, Silver
Little Melvine (a)	Rollinsville	Elmer Hetzer and Associates	2327 Fourteenth Street, Boulder	Gold, Silver, Tungsten
Lone Star (m)	Rollinsville	C. S. Hawn and J. F. Beckstrom	Rollinsville	Gold, Silver
Long John	Apex	Dolph Snyder	Central City	Gold
Lotus	Central City	Hughes-Parsons Company	Central City	Gold, Silver, Copper
Mackey-Phoenix-Conlee-Burroughs Group	Central City	The California-Hidden Treasure Mines Company	307 Boston Building, Denver	Gold, Silver

Morning Star (a).....	Russell Gulch.....	Fred H. Leach.....	Idaho Springs.....	Gold, Silver
National .....	Central City.....	John Lyng and Associates.....	Central City.....	Gold, Silver
New Brunswick (m).....	Central City.....	Sam Morris.....	Rox 682, Central City.....	Gold, Silver
Old Dougherty.....	Central City.....	F. W. McCarthy and Associates.....	Central City.....	Gold, Silver
Old Town (a).....	Russell Gulch.....	Old Town Mining Corporation.....	Idaho Springs.....	Gold, Silver
Part of Mounmouth-Kansas.....	Idaho Springs.....	The California-Hidden Treasure Mines Company.....	Idaho Springs.....	Gold, Silver
Phillips .....	Russell Gulch.....	Edna Renland.....	307 Boston Building, Denver.....	Gold, Silver
Pittsburgh-Notaway (a) (m).....	Central City.....	J. C. B. Millard.....	Russell Gulch.....	Gold, Silver
Pogue (a).....	Russell Gulch.....	William Grenfell and Fred Dallaplatra.....	530 U. S. National Bank Building, Denver.....	Gold, Silver (c)
Running Lode.....	Central City.....	L. A. and W. E. Griffith.....	Russell Gulch.....	Gold, Silver
Silver Dollar.....	Central City.....	Glen E. Fassler and Gold Ridge Syndicate.....	Central City.....	Gold, Silver
Snowden .....	Central City.....	Snowden Mines, Inc.....	Central City.....	Gold, Silver, Copper, Lead, Zinc
Stubtail (a).....	Central City.....	Stub Tail Leasing Pool, c/o C. R. McKay.....	414 Equitable Building, Denver.....	Gold
Star .....	Rollinsville.....	Gilpin Consolidated Mines, Inc.....	Rox 71, Idaho Springs.....	Gold, Silver (c)
St. Louis-Justice.....	Central City.....	E. F. Krewinghaus.....	Rollinsville.....	Gold, Silver, Copper
Sunrise (m).....	Rollinsville.....	Elizabeth E. Hand and Florence G. Folsom.....	Blackhawk.....	Gold, Silver, Copper, Lead
Sunshine .....	Central City.....	Robert H. Sayre.....	1535 Grant Street, Denver.....	Gold, Silver (c)
Sutton .....	Russell Gulch.....	E. H. Bolling and J. A. Skarin.....	Boston Building, Denver.....	Gold
Unity .....	Russell Gulch.....	J. J. Girardet and Associates.....	1590 South Emerson Street, Denver.....	Gold
Victoria (n).....	Rollinsville.....	Victoria Mine Association.....	Central City.....	Gold, Silver, Copper
War Dance.....	Idaho Springs.....	Ben Neepser.....	c/o A. F. Rawe, Grand Coulee, Washington.....	Gold, Silver
War Eagle (a).....	Rollinsville.....	Gold Mines Consolidated Inc.....	Idaho Springs.....	Gold, Silver
Washington Day (a).....	Central City.....	D. N. Rousesteel and Guy Rolph.....	Rollinsville.....	Gold, Silver
We Got Em (a) (m).....	Blackhawk.....	Silver Creek Gold Mines, Ltd.....	Blackhawk.....	Gold, Silver, Lead
West Notaway.....	Central City.....	Karl Brueselbach.....	Blackhawk.....	Gold, Silver
			214 First National Bank, Denver.....	Gold, Silver

## OPERATING MINES IN GRAND COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
La Plata.....	Empire.....	George H. Riggle.....	388 South Pearl Street, Denver.....	Gold, Silver, Lead
Wolverine (a).....	Grand Lake.....	Wolverine Syndicate.....	Grand Lake.....	Gold, Silver, Lead

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN GUNNISON COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Akron	Sargents	Callahan Zinc-Lead Company	9 Rockefeller Plaza, New York City	Gold, Silver, Lead, Zinc (c)
Burleson (a) (m)	Ohio City	Burleson Mines, Inc.	Salida	Gold, Silver
Carter (m)	Ohio City	Carter Mines Company	Box 100, Ohio City	Gold, Silver
Chicago Climax	Pitkin	Golden Gopher Mining Company	508 Merritt Hutcheson, Pitkin	Gold, Silver, Lead
Columbine Placer (m)	Almont	Columbine Placer Mines, Inc.	308 C. A. Johnson Building, Denver	Gold, Silver
Golden Comet	Crested Butte	Edith H. McHenry	Gunnison	Gold
Independent	Pitkin	J. C. Ternahan	811 Ouray Avenue, Grand Junction	Gold, Silver, Lead
Kerber Creek	Crested Butte	E. F. Burkhalter	Crested Butte	Gold, Copper, Lead, Zinc
Little Dick	Sargents			Gold, Silver
Lucky Strike	Sargents	A. M. Woodworth	Sargents	Gold, Silver
Northern Light (m)	Pitkin	J. C. Ternahan	811 Ouray Avenue, Grand Junction	Gold (c)
North Pole (a)	Crested Butte	Superior Metal Mines, Inc., c/o R. E. Simpson	Crested Butte	Silver, Copper
Wayne Lode	Ohio City	J. W. Stone	Ohio City	Gold, Silver

## OPERATING MINES IN HINSDALE COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Golden Mammoth (a)	Lake City	Golden Mammoth Mines, Inc.	36 Wall Street, New York City	Gold, Silver
Mill Placer	Lake City	Carl B. Passer	Lake City	Gold, Silver, Copper, Lead, Zinc
Ute and Ulay (a) (m)	Lake City	M. B. Burke Mining and Investment Company	301 Humboldt Street, Denver	Gold, Silver, Lead, Copper, Zinc

## OPERATING MINES IN LAKE COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Adelaide (a)	Leadville	E. B. and D. E. Webster and Company	198 South Toledo, Leadville	Gold, Silver, Lead
Alicante (a)	Fremont Pass, Leadville	Carl Wurtz and Associates	Leadville	Lead, Zinc
Bengal Tiger and Gordon	Twin Lakes	Chas. L. and H. W. Brown	Kremmling	Gold, Silver, Copper, Lead



Big 4 (a).....	Leadville	{ Big 4 Leasing Company.....Box 2, Leadville.....	{ Gold, Silver, Lead
Black Prince.....	Leadville	{ George and Lewis Cramer.....141 South Toledo Avenue, Leadville.....	{ Gold, Silver, Lead
Bob Burns.....	Leadville	A. V. Hunter Inv. Co.....635 Seventeenth Street, Denver.....	Gold, Silver, Lead, Zinc
Breece.....	Leadville	Bob Burns Mining Co.....Leadville	Gold, Silver, Copper, Lead
Chippewa.....	Leadville	P. M. Lease, c/o Edward P. Chapman.....Leadville	Gold, Silver, Lead
Climax Molybdenum (m).....	Climax	Eugene Maki and Company.....410 East Eighth Street, Leadville.....	Gold, Silver, Lead
Cora Belle.....	Leadville	Climax Molybdenum Company.....Climax	Molybdenum
Dolly B.....	Leadville	Thomas Palmer.....Leadville	Silver, Lead
Eliza.....	Leadville	Jack McCaughan and Company Lease.....Leadville	Gold, Silver, Lead
Elkhorn (a).....	Leadville	F. L. Smith.....Leadville	Gold, Silver, Copper, Lead
Fairview.....	Leadville	Moraine Mining Company.....Room 1501, 14 Wall Street, New York City.....	Gold, Silver, Lead (c)
Famous.....	Leadville	Chrysolite Company.....Leadville	Manganese
Fanny Rawlings.....	Leadville	W. J. McDonnell and Company Lease.....325 West 7th Street, Leadville.....	Gold, Silver, Lead
First National (a).....	Leadville	Andy Caine and Company.....515 East Sixth Street, Leadville.....	Gold, Silver, Lead
Forbes.....	Leadville	London Deep Mines Company.....310 West Eighth Street, Leadville.....	Gold, Silver, Lead
Fortune (a).....	Leadville	New Monarch Lease.....215 West Sixth Street, Leadville.....	Gold, Silver, Lead
Golden Eagle.....	Leadville	Fortune Gold Mines Company.....Box 872, Leadville.....	Gold, Silver, Lead, Zinc
Grand Union.....	Leadville	Golden Eagle Mining Company and Associates.....Leadville	Gold, Silver, Copper, Lead
Hersey Tunnel.....	Leadville	Grand Union Mining Claim.....Leadville	Gold, Silver
Hickland Mary.....	Leadville	C. H. Stomer.....Granite	Gold, Silver
Ibex.....	Leadville	Ellis Webster and Associates.....Leadville	Gold, Silver, Lead
Jitterbug (a).....	Leadville	Ibex Mines Company.....120 West Eighth Street, Leadville.....	Gold, Silver, Lead
Johnson Lease (a).....	Leadville	Dan O'Leary and Company.....318 East Fifth Street, Leadville.....	Gold, Silver (c)
Killarney Group (a).....	Leadville	Wahio Johnson.....604 East Sixth Street, Leadville.....	Gold, Silver, Lead
Last Chance.....	Leadville	Killarney Properties, c/o Paul Clark Vendome Hotel, Leadville.....	Gold, Silver (c)
		Twin Lakes.....Twin Lakes.....	Gold, Silver, Lead (c)

(n) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN LAKE COUNTY, 1939—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Lilly (a).....	Leadville	Thomas Joyce and Company.....	301 East Fifth Street, Leadville.....	Gold, Silver, Lead
Mald of Erin.....	Leadville	H. G. N. Mining Co.....	Leadville.....	Gold, Silver, Lead, Zinc
Mount Champion.....	Leadville	Kenneth E. Barton.....	Leadville.....	Gold, Silver
New Monarch (a).....	Leadville	John O'Leary and Company.....	1400 Harrison Avenue, Leadville.....	Gold, Silver, Lead
Nisi Prius.....	Leadville	Frank Kendrick, Jr., and Associates.....	229 East Eleventh Street, Leadville.....	Gold, Silver, Lead
Ollie Reed No. 2.....	Leadville	Ollie Reed Lease.....	Leadville.....	Manganese (c)
P. M. Lease and Breece.....	Leadville	P. M. Lease.....	Leadville.....	Gold, Silver, Lead
Printer Boy No. 49.....	Leadville	W. J. Caulfield.....	223 E. 8th Street, Leadville.....	Gold, Silver, Lead
Resurrection.....	Leadville	Resurrection Mining Company.....	Box 936, Leadville.....	Gold, Silver
Silver Dump (a).....	Leadville	Thomas Palmer.....	146 Ouray Avenue, Grand Junction.....	Gold, Silver, Lead
St. Louis Tunnel.....	Leadville	Riley and Company Lease.....	Leadville.....	Silver
Tenderfoot.....	Leadville	Ollie Reed Lease.....	229 East Eleventh Street, Leadville.....	Gold, Silver, Lead, Zinc
Togo.....	Leadville	Togo Mining Company.....	Leadville.....	Gold, Silver, Lead
Tribune.....	Leadville	J. Cortellini.....	Leadville.....	Gold, Silver, Lead
Triumph.....	Leadville	Triumph Gold Inc.....	931 U. S. National Bank Building, Denver.....	Gold, Silver, Lead
Tucson (a).....	Leadville	Axel Lind Lease.....	419 East 2nd, Leadville.....	Gold, Silver
Valley.....	Leadville	Harry Sundstrom.....	Box 266, Leadville.....	Silver, Lead (c)
Venir.....	Leadville	The Venir Lease.....	329 West 8th, Leadville.....	Gold, Silver, Lead
Wall Street and Ella Dumps.....	Leadville	Dewar and Brady.....	Leadville.....	Gold, Silver, Lead, Zinc
Winnie Dump.....	Leadville	Robert D. Elder.....	Leadville.....	Gold, Silver, Lead
Wolfone.....	Leadville	M. A. Nicholson.....	Leadville.....	Gold, Lead
Yak.....	Leadville	Yak Mining, Milling and Tunnel Co.....	Leadville.....	Gold, Silver, Copper, Lead

## OPERATING MINES IN LA PLATA COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Bessie G.....	Durango	Bert Thompson.....	Durango.....	Gold, Silver
Black Diamond.....	Hesperus	Gold Belt Mining and Development Company.....	c/o Wm. R. Almes, Farmington, New Mexico.....	Gold
Gold King.....	Durango	Frank Spaeth.....	828 Third Avenue, Durango.....	Gold, Silver
May Day (a).....	Hesperus	J. F. Farmer, John Babbich and Alvie Hood.....	Hesperus.....	Gold, Silver

# OPERATING MINES IN LARIMER COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Cash (a)	.....Eggers	C. D. Biggerstaff and G. L. O'Conner.	Eggers	Gold, Silver, Lead, Copper (c)
Free Gold (a) (m)	.....Logcabin	Free Gold Mining and Milling Company	.....Livermore	Gold, Silver
Rockfield	.....Logcabin	S. A. Pendergast	.....Eggers	Gold, Silver (c)

# OPERATING MINES IN MESA COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Calamity (a)	.....Gateway	G. W. Bowman and H. L. Brown	Palisade	Carnotite
U-Naweeep (a)	.....Gateway	U-Naweeep Mining Company	743 Gunnison Avenue, Grand Junction	Cobaltite, Gold, Silver, Lead, Copper

# OPERATING MINES IN MINERAL COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Amethyst	.....Creede	Creede Mills Incorporated	1024 Patterson Building, Denver	Gold, Silver, Lead
Amethyst No. 5 (m)	.....Creede	Creede Mills Incorporated	1024 Patterson Building, Denver	Gold, Silver, Lead
Commodore No. 3	.....Creede	Commodore Bachelor Mines, Inc.	Monte Vista	Silver
Corsair (a)	.....Creede	Helmeick-Wright Lease	Creede	Silver, Lead
Grand Army No. 1, 2, 3, 4 (a)	.....Creede	L. C. Oppy and W. S. Lewis	Creede	Silver, Lead (c)
Happy Thought	.....Creede	Creede Mills Incorporated	Creede	Gold, Silver
Monon	.....Creede	Weaver Oates Lease	Creede	Silver, Lead, Zinc
Ochre	.....Creede	Dwyer Leasing Company	Creede	Silver, Lead
Teresa	.....Creede	Spar City Consolidated Mines	Creede	
Volunteer, Del Monte, Pittsburgh, Last Chance, New York	.....Creede	Emperius Mining Company	695 Locust Street, Denver	Silver, Lead
Wagon Wheel Gap (a) (m)	.....Wagon Gap	The Colorado Fuel and Iron Corporation	Continental Oil Building, Denver	Fluorspar

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN MONTEZUMA COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Outwest .....	Mancos .....	Outwest Mining Company .....	c/o Geo. W. Johnston, 105 South, 49th Street, Omaha, Nebraska .....	Gold, Silver, Copper
Red Arrow (m) .....	Mancos .....	The Red Arrow Gold Corporation .....	Mancos .....	Gold, Silver, Lead
Stafford .....	Mancos .....	Barr-Menefee Mining Company .....	Mancos .....	Gold, Silver
Thunder (a) .....	Mancos .....	Charles H. Starr .....	Mancos .....	Gold, Silver, Lead (c)

## OPERATING MINES IN MONTROSE COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Beta and Beta Wonder (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Cashin .....	Paradox .....	E. P. Simpson and Associates .....	767 E. First South, Salt Lake City, Utah .....	Copper
Cashin (a) .....	Paradox .....	Simpson Mining Company .....	Heber City, Utah .....	Copper
Club (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Coloradium (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Cripple Creek (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Cripple Creek No. 2 (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Florence Group (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Honeymoon (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Jo Junior (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Little Dick (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Ophir (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Rambler (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Republican (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Saucer Basin (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite
Sharkey (m) .....	Uruvan .....	U. S. Vanadium Corporation .....	30 E. 42nd Street, New York City .....	Carnotite



The Open Cut (m).....	Uravan	U. S. Vanadium Corporation.....	30 E. 42nd Street, New York City	Carnotite
Tripod Group (m).....	Uravan	U. S. Vanadium Corporation.....	30 E. 42nd Street, New York City	Carnotite
U. S. Vanadium Company's Salt Works.....	Uravan	U. S. Vanadium Corporation.....	30 E. 42nd Street, New York City	

## OPERATING MINES IN OURAY COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
American Nettle.....	Ouray	McCullough Lease.....	Ouray	Gold, Silver
Atlas (a) (m).....	Ouray	George and Victor Lovengood.....	Ouray	Gold, Silver, Lead
Bachelor, Syracuse Tunnel, and Wedge.....	Ouray	Bachelor Dev. Company and Bachelor Consolidated Mines Co.....	Ouray	Gold, Silver, Copper, Lead, Zinc
Camp Bird (m).....	Ouray	The King Lease, Inc.....	Ouray	Gold, Silver, Copper, Lead
Chief Ouray.....	Ouray	Chief Ouray Cons. Mines, Inc.....	18 E. 41st Street, New York City	Gold, Silver (c)
Colombo .....	Ouray	Mike Serra and Associates.....	Ouray	Gold, Copper, Lead, Zinc
Dauntless Lease on Ida L. Mine (a).....	Ouray	Dauntless Lease.....	Box 39, Ouray	Gold, Lead, Copper, Zinc
Emil Johnson Lease on Belfast .....	Ouray	D. W. Squirrel and Emil Johnson.....	Montrose	Copper, Lead, Zinc
Guston (a).....	Ouray	G. A. Franz, Inc.....	Ouray	Gold, Silver, Copper, Lead (c)
Idarado and Treasury Tunnel.....	Ouray	{ Idarado Mining Company..... { San Juan Metals Corp.....	14 Wall St., New York City... 19 W. 44th St., New York City	{ Gold, Silver, Copper, Lead {
Joker Tunnel (a) (m).....	Ouray	G. A. Franz Mines and G. A. Franz, Inc.....	Ouray	(c)
Jonathan .....	Ouray	McCullough Lease.....	Ouray	Gold, Silver (c)
Mineral Farm.....	Ouray	W. M. Cutler and Associates.....	Box 28, Ouray	Gold, Silver, Lead, Zinc
Morning Star.....	Ouray	John Parnell.....	Silverton	Gold, Silver, Copper, Lead (c)
Paymaster Group (a).....	Ouray	Mrs. Emma K. Harrison.....	Dallas, Texas	Gold, Silver, Lead
Pony Express (m).....	Ouray	G. A. Franz, Inc.....	Ouray	Gold, Silver, Lead, Copper, Zinc

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.



## OPERATING MINES IN OURAY COUNTY, 1939—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Scotch Girl (a) (m)	Ouray	{ G. A. Franz Mines. G. A. Franz, Inc.	Ouray	{ (c) Gold, Silver, Cop- per, Lead
Senorita Extension	Ouray	Belle Herzinger	Ouray	
			Box 507, Ouray	
Silver Tip-Gold Crown (a) (m)	Ouray	Silver Tip Gold Crown Mining and Milling Company	Union Trust Building, Wash- ington, D. C.	Gold, Silver, Cop- per, Lead, Zinc
Trust Ruby (a) (m)	Ouray	William E. Fairfax, Matt Barcotta and Joe Savoren	Ouray	Gold, Silver
Wanakah (a) (m)	Ouray	{ Roy and Franklin R. Shafet. McCullough Lease.	Ouray	{ Gold, Silver
Yankee Girl Dump (a) (m)	Ouray	G. A. Franz, Jr., and G. A. Franz, Inc.	Ouray	
			Ouray	Silver, Copper

## OPERATING MINES IN PARK COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
American	Alma	W. A. Ellis, Inc.	327 Majestic Building, Denver	Gold, Silver
Black Butterfly (a) (m)	Como	Storm Child Gold Mining Company, Inc.	Como	Gold, Silver
Butte (m)	Alma	London Butte Gold Mines Company	529 Equitable Building, Denver	Gold, Silver
Cornish Wall	Alma	Cornish Wall Mines, Incorporated	609 California Building, Denver	Gold, Silver (c)
Eastside (a)	Alma	East Side Gold Mining Company	Fairplay	Gold, Silver (c)
Evening Star	Alma	H. P. Miller	Alma	Gold, Silver, Cop- per, Lead
Funston and Lucky Strike	Alma	Buckskin Gulch Mining Company	Alma	Gold, Silver, Lead
Garvie (a)	Fairplay	Garvie London Gold Mining Company	720 U. S. National Bank Building, Denver	Gold, Silver (c)
Golden Era (a)	Alma	E. L. Cooper	734 South Race Street, Denver	Gold, Silver
Good Samaritan	Alma	Poston and Daines	Alma	Gold, Silver
Little Fool	Alma	The London Mines and Milling Company	Alma	Gold
London (m)	Alma			
Lone Jack Molybdenum (a)	Alma	The Lone Jack Molybdenum Company	609 California Building, Denver	Gold, Silver
Magnolia	Alma	Magnolia Gold Mines, Inc.	Alma	Gold, Silver
Nova Zembla	Alma	Cline and Simmons	Alma	Gold, Silver, Copper
Old South London (a) (m)	Alma	Chicago Mines Company	938 U. S. National Bank Building, Denver	Gold, Silver
Orphan Boy (a)	Alma	T. H. Cline and Associates	Alma	Gold, Silver

Pirate (a).....	Alma	Associated Gold Miners, c/o Mr. H. H. Larson.....	Albin, Wyoming.....	Gold, Silver (c)
Sweet Home.....	Alma	Edwin C. Spray.....	2110 Market Street, Denver.....	Gold, Silver, Copper, Lead
Union Number Five (a).....	Alma	Fred M. Pierce and John W. Siemon.....	Alma	Gold, Silver (c)
Wheeler (a).....	Alma	Dr. R. W. Fraser and Associates.....	Majestic Building, Denver.....	Gold, Silver, Lead
	Alma	Taylor, Maben and Lassabo.....	Alma	Gold, Silver, Copper, Lead

### OPERATING MINES IN PITKIN COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Aspen Leases.....	Aspen	D. P. Rohlfing.....	Aspen	Silver
Henry Clay (a).....	Aspen	Herron Brothers.....	Aspen	Silver, Lead
Highland Tunnel (a).....	Aspen	Highland Mines, Incorporated.....	Aspen	Silver, Lead (c)
Midnight (a).....	Aspen	The Midnight Mining Company.....	Aspen	Silver, Lead, Zinc
	Aspen	H. E. Brown.....	Aspen	Silver, Lead

### OPERATING MINES IN RIO GRANDE COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Summitville (m).....	Summitville	Summitville Consolidated Mines, Inc.....	Summitville	Gold, Silver

### OPERATING MINES IN SAGUACHE COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alamosa .....	Crestone	Messrs. Klostermeyer and Wagner.....	Crestone	Gold, Silver
Bonanza and Cocomongo.....	Bonanza	St. Louis Smelting and Refining Company .....	722 Chestnut Street, St. Louis, Missouri.....	Gold, Silver, Copper, Lead, Zinc
Commander (a).....	Bonanza	Commander Mining and Milling Company, Inc.....	Box 248, Pratt, Kansas.....	Gold, Silver, Lead (c)
Columbia (a).....	Bonanza	James C. Cole and Associates.....	Villa Grove.....	Silver (c)
Essie .....	Villa Grove	Mrs. Esther Cole.....	Villa Grove.....	Gold, Silver, Lead
Hartman Jefferson (m).....	Mineral Hot Springs	Triple T Mining Company, Inc.....	Box 607, Salida.....	(c)

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN SAGUACHE COUNTY, 1939—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Joe Wheeler.....	Bonanza	Clara P. Williams.....	P. O. Box 2005, Pueblo.....	Gold, Silver, Lead
Josie K. Folsom (a).....	Del Norte.....	Josie K. Folsom Mining and Milling Company.....	4280 A. Holly Avenue, St. Louis, Missouri.....	(c) Gold, Silver, Lead, Copper, Zinc
Jupiter .....	Bonanza	C. H. Bowers and Ed Paul.....	Saguache .....	(c) Gold, Silver, Lead, Copper, Zinc
Legal Tender (a).....	Bonanza	A. F. Neely and Dr. H. B. McCorkle.....	9 North Tejon Street, Colorado Springs, Colorado.....	Gold, Silver, Lead, Copper (c)
Paragon and Michigan (a).....	Bonanza	Flagstaff Mining and Milling Company.....	Bonanza, via Villa Grove.....	Silver, Lead, Zinc
Rawley (a).....	Bonanza	Lester Pickering.....	Bonanza .....	Silver, Lead, Zinc, Copper
Rawley No. 2 (a).....	Bonanza	Erik Eastman.....	Villa Grove.....	Gold, Silver, Lead, Copper
Spring Gulch (a).....	Villa Grove.....	Triple T Mining Company.....	Box 607, Salida.....	(c)
Turquoise (a).....	Villa Grove.....	Al Hall.....	Villa Grove.....	Turquoise
Warwick .....	Bonanza	.....	.....	Gold, Silver, Lead

## OPERATING MINES IN SAN JUAN COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Bandora .....	Silverton	Blanco Mining Company.....	Midland Savings Building, Denver .....	Gold, Silver, Copper, Lead
Brooklyn .....	Silverton	Brooklyn Group of Claims.....	Box 524, Ouray.....	Gold, Silver, Lead, Copper
Caledonian (a) (m).....	Silverton	Glenn H. Davies.....	Silverton .....	Gold, Silver, Copper, Lead, Zinc (c)
Coming Wonder.....	Silverton	Coming Wonder Mining Company.....	Silverton .....	Gold, Silver, Copper, Lead
Copper Belle Group.....	Silverton	Charles E. Petherhoff.....	Silverton .....	Gold, Silver
Champion (a).....	Silverton	Champion Gold Mines.....	629 Edison Building, Los Angeles, California.....	Gold, Silver, Copper, Lead
Crusader Gold (a).....	Silverton	Maude W. Russell.....	Creede .....	Gold, Silver, (c)
Gold Hub (a) (m).....	Silverton	Gold Hub Mines Company.....	Denham Building, Denver.....	Gold, Silver, Copper, Lead (c)
Golden Horn (a) (m).....	Silverton	George C. Marbut.....	1030 U. S. National Bank Building, Denver.....	Gold

Highland Mary (a) (m).....	Silverton	Highland Mary Mines, Inc.....	900 Land Bank Building, Kansas City, Missouri.....	Gold, Silver, Copper, Lead
Jennie Parker (a).....	Silverton	Burgess and Green.....	Silverton	Gold, Silver, Copper, Lead
Lead Carbonate.....	Eureka	Vaughn Jones.....	Silverton	Gold, Silver, Lead, Copper
Lease on Little Dora Mill and Empire Mine Dumps (a) (m).....	Silverton	Roy E. Blakely.....	Silverton	Gold, Silver, Lead
Little Funny (a).....	Silverton	Frank Nelson and Associates.....	Silverton	Gold, Silver, Copper, Lead
Lucky Jack.....	Eureka	C. J. Moberly.....	Montrose	Gold, Silver, Copper, Lead
Molas and Sultan Mountain (a).....	Silverton	Mogul Gold Mining Association.....	Silverton	Gold, Silver, Copper, Lead
Mountain Queen (a).....	Silverton	Mountain Queen Lease, c/o C. R. Walker.....	Silverton	Gold, Silver, Copper, Lead (c)
Mystery Gold (m).....	Silverton	Mystery Gold Mining Company.....	426 U. S. National Bank Building, Denver.....	Gold, Silver, Lead
Queen City Group (a).....	Silverton	Mrs. Hermine Z. Hansen.....	41 North Portage Path, Akron, Ohio.....	Silver, Copper, Lead, Zinc
Robert Bonner (a).....	Silverton	Crystal Lake Gold Mining Company.....	Durango.....	Gold, Silver, Copper, Lead, Zinc
Shenandoah-Dives (m).....	Silverton	Shenandoah-Dives Mining Company.....	1000 Grand Avenue Temple, Kansas City, Missouri.....	Gold, Silver, Copper, Lead, Zinc
Silver Ledge.....	Silverton	Silver Ledge Lease, c/o Otto Anesi.....	Silverton	Gold, Silver, Copper, Lead, Zinc
Sultan Tunnel.....	Silverton	North Star Sultan Mining Company.....	426 U. S. National Bank Building, Denver.....	Gold, Silver, Copper, Lead
Summit (a).....	Silverton	E. F. Walker.....	South Fork.....	Gold, Silver, Copper, Lead
Treasure Mountain.....	Silverton	Treasure Mountain Gold Mining Company.....	801 Midland Savings Building, Denver.....	Gold, Silver, Copper, Lead (c)

# OPERATING MINES IN SAN MIGUEL COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Allegheny	Telluride	Frank Datto	Telluride	Gold, Silver (c)
Alta-St. Louis (m)	Ophir	Alta Mines Inc.	822 First National Bank Building, Denver	Gold, Silver, Lead

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN SAN MIGUEL COUNTY, 1939—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Argentine Group (a).....	Telluride	Tomboy Gold Mines Inc.	Telluride	Gold, Silver, Lead, Copper, Zinc
Butterfly Cons. (m).....	Ophir	Butterfly Cons. Mines, Inc.	2432 N. 28th Street, Milwaukee, Wisconsin	Gold, Silver, Copper, Lead, Zinc
Carbonero .....	Telluride	Carbonero Mining and Reduction Company	c/o H. H. Stevens, Alta Vista Hotel, Colorado Springs	Gold, Silver, Copper, Lead
Cimarron .....	Telluride	Joseph A. King	Telluride	Gold, Silver, Copper
Gold Run Dump .....	Telluride	Arnold J. Knoefler	Telluride	Gold, Silver, Copper, Lead
Hidden Treasure.....	Redvale	Edgar J. Reed	Redvale	Silver, Copper
Mineral Mines.....	Norwood	Mineral Mining Corporation	513 Kitteridge Building, Denver	Vanadium
Nellie and Laura (a) (m).....	Telluride	Paul Nardin	Telluride	Gold, Silver
New Dominion .....	Ophir	Belisle Brothers	Ophir	Gold, Silver, Copper, Lead, Zinc
North Continent (m).....	Cedar	North Continent Mines, Inc.	512 Majestic Building, Cheyenne, Wyoming	Vanadium
Savage .....	Telluride	O. E. Blixt	Telluride	Gold, Silver
Silver Pick .....	Telluride	Gio Oberto	Telluride	Gold, Silver, Copper, Lead
Suffolk (m).....	Ophir Loop	Dr. W. G. Clagget and O. C. Adams	Dayton, Ohio	Gold, Silver (c)
Veta Mines (m).....	Telluride	Veta Mines, Inc.	507 Boston Building, Denver	Gold, Silver, Lead, Copper, Zinc
Yellow Jacket (a).....	Ophir	Pollman Brothers Mining Company	Telluride	Gold, Silver, Copper, Lead (c)
.....	Telluride	A. B. Couse and H. Home	Telluride	Gold, Silver, Copper

## OPERATING MINES IN SUMMIT COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Atlas .....	Breckenridge	Atlas Mining Company	Breckenridge	Gold, Silver, Lead
Big Four .....	Kremmling	Walter McDaniel	Kremmling	Gold, Silver, Lead, Zinc
Blue Flag (a).....	Breckenridge	George Robinson	Breckenridge	Gold, Silver, Lead, Zinc
Bullion (a) (m).....	Montezuma	Mrs. Nina P. Vanderhill	Montezuma	Gold, Silver, Lead, Copper
Cross Mountain.....	Breckenridge	W. L. Davenport	Breckenridge	Silver, Lead
Diamond Jack (a).....	Breckenridge	Robert A. Cook and Associates	2290 Grape Street, Denver	Gold, Silver



Dunkin	.....Breckenridge	.....Dunklin Mining Company	.....c/o W. F. Page, 1343 High Street, Denver.....	Gold, Silver, Lead
Florado	.....Breckenridge	.....F. R. Wolfe.....	723 U. S. National Bank Building, Denver.....	Silver, Lead, Zinc
Fredonia (a)	.....Breckenridge	.....M. Brugger and D. F. Miner.....	Breckenridge	Silver, Lead, Zinc
Gold Crest (a)	.....Kokomo	.....Gold Crest Mining Company.....	1124 Bannock Street, Denver.....	Gold, Silver (c)
Jessie	.....Breckenridge	.....Alex Matthiesen and Associates.....	Breckenridge	Gold, Silver
Jumbo	.....Breckenridge	.....Jumbo Properties, Inc.....	708 Colorado Building, Denver.....	Silver, Copper, Zinc
Last Dollar (a)	.....Breckenridge	.....Frank Graco and Associates.....	Breckenridge	Gold, Silver
Martin (a)	.....Montezuma	.....C. Martin.....	Montezuma	Gold, Silver, Lead
Pennsylvania	.....Montezuma	.....George Robinson.....	Breckenridge	Gold, Silver, Copper, Lead
Puzzle	.....Breckenridge	.....Nicholas Baieson.....	4965 Knox Court, Denver.....	Gold, Silver
Roberta (a) (m)	.....Montezuma	.....Marlin Mines.....	860 Omaha National Bank Building, Omaha, Nebraska.....	Gold, Silver, Lead, Zinc (c)
Sallie Barber (Royal Tiger)	.....Breckenridge	.....Winslow Brothers and Associates.....	Breckenridge	Gold, Silver, Copper, Lead, Zinc
Silver King	.....Montezuma	.....Hugh A. Chisholm and Associate.....	Montezuma	Gold, Silver, Lead
Star of the West (a)	.....Montezuma	.....H. A. Daniels and Associates.....	3489 South Downing Street, Denver.....	Gold, Silver, Lead (c)
Three Kings (a)	.....Breckenridge	.....The Quinn and McGill Motor Supply Co.....	437 Broadway, Denver.....	Gold, Silver (c)
Wilfley	.....Kokomo	.....Wilfley Leasing Company.....	633 U. S. National Bank Building, Denver.....	Gold, Silver, Lead
	.....Frisco	.....Farrell Taylor.....	Frisco	Gold, Silver, Lead

## OPERATING MINES IN TELLER COUNTY, 1939

Name of Mine	Location	Operator	P. O. Address	Character of Product
Acacia .....	Bull Hill.....	Lessees .....	Cripple Creek.....	Gold
Ada Bell (a).....	Eclipse Gulch.....	The Queen Exploration Company, Inc.....	Colorado Springs.....	Gold
Ajax .....	Battle Mountain.....	Golden Cycle Corporation.....	Box 86, Colorado Springs.....	Gold
.....	.....	Odeca Mining Company.....	c/o E. H. Geary, 1315 Grant Street, Denver.....	Gold
Amanda .....	Cripple Creek.....	Carl F. H. Krug.....	2718 Woodburn Avenue, Cincinnati, Ohio.....	Gold
American Eagles.....	Bull Hill.....	.....	Box 61, Cripple Creek.....	Gold
.....	.....	American Gold, Incorporated.....	Box 141, Capitol Hill Station, Denver.....	Gold
Anchoria Leland.....	Gold Hill.....	Golden Cycle Corporation.....	Box 86, Colorado Springs.....	Gold
Anna J.....	Bull Hill.....	Anna J. Leasing Company.....	Victor.....	Gold
Arequa (a).....	Cripple Creek.....	Glen Walcott.....	Cripple Creek.....	Gold

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN TELLER COUNTY, 1939—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Arequa Placer.....	Cripple Creek.....	Walter E. Rockwell.....	Box 146, Cripple Creek.....	Gold
Ben Hur.....	Cripple Creek.....	F. D. Doepeke.....	604 East Fontanero Street, Colorado Springs.....	Gold
Block 47 (a).....	Cripple Creek.....	Johnson and Tucker.....	Cripple Creek.....	Gold
Block 98 (a).....	Cripple Creek.....	Lucky Seventh Syndicate.....	Cripple Creek.....	Gold
Block 140, etc.....	Cripple Creek.....	Conundrum Gold Mining Company.....	Cripple Creek.....	Gold (c)
Bogart-Blue Flag-Twin Sisters No. 2.....	Raven Hill.....	Bruce Huston and Company.....	Cripple Creek.....	Gold
Burke (a).....	Gold Hill.....	Dr. T. R. Knowles.....	Mining Exchange Building, Colorado Springs.....	Gold
Cameron (m).....	Cameron.....	Cameron Gold Mines, Incorporated.....	512 Equitable Building, Denver.....	Gold
Cameron-Vindicator.....	Bull Hill.....	Cameron-Vindicator Tunnel Syndicate.....	607 Empire Building, Denver.....	Gold
Cardinal.....	Cripple Creek.....	Roy E. Fackler Company.....	Cripple Creek.....	Gold
Carlton (a).....	Victor.....	Golden Cycle Corporation.....	Box 86, Colorado Springs.....	Gold
Colorado City.....	Bull Hill.....	Colorado Gold Inc.....	1336 Welton Street, Denver.....	Gold
Colorado King (a).....	Cripple Creek.....	Archite Hager.....	Cripple Creek.....	Gold
Conundrum.....	Gold Hill.....	Conundrum Gold Mining Company.....	Cripple Creek.....	Gold
Cookerly Lease on El Paso.....	Beacon Hill.....	C. G. Cookerly and Tollie Sammons.....	Cripple Creek.....	Gold
Cresson.....	Eclipse Gulch.....	The Cresson Consolidated Gold Mining and Milling Company.....	Box 86, Colorado Springs.....	Gold
Damon and Hardwood.....	Ironclad Hill.....	Luther A. and Ray Jenks.....	Independence.....	Gold
Dante.....	Bull Hill.....	F. G. Blackwood.....	Oklahoma City, Oklahoma.....	Gold
Dead Horse (a).....	Cripple Creek.....	The Tenderfoot Mining Company.....	1010 First National Bank Building, Denver.....	Gold
Deadwood.....	Bull Hill.....	Gold Bullion Mines, Inc.....	434 U. S. National Bank Building, Denver.....	Gold
Delmonico.....	Cripple Creek.....	Delmonico Mines Co.....	c/o H. J. Gehm, Colorado Springs.....	Gold
Dexter.....	Bull Hill.....	Bonanza Mining and Milling Company.....	Victor.....	Gold
Doctor Jack Pot.....	Cripple Creek.....	The Doctor Jack Pot Mining Company.....	Box 86, Colorado Springs.....	Gold
Dolly Varden.....	Raven Hill.....	Squaw Gulch Gold Mining Company.....	Box 229, Victor.....	Gold
Dooley Shaft (a).....	Gold Hill.....	Dooley Leasing Company.....	315 East Carr Avenue, Cripple Creek.....	Gold (c)
Economic Dump.....	Eclipse Gulch.....	Warren Bogle.....	Victor.....	Gold
Elkhorn (a).....	Cripple Creek.....	H. W. Higham and William Cody.....	Cripple Creek.....	Gold
Elkton.....	Cripple Creek.....	The Elkton Company.....	Box 86, Colorado Springs.....	Gold
Elmer and Bent (a).....	Gold Hill.....	Ed Elmer and Associates.....	Cripple Creek.....	Gold
El Paso.....	Beacon Hill.....	Gold Producers, Incorporated.....	520 U. S. National Bank Building, Denver.....	Gold
E. Porter Gold King (a).....	Gold Hill.....	E. Porter Gold King Mines, c/o A. G. Riley.....	Cripple Creek.....	Gold (c)
Favorite (a).....	Cripple Creek.....	Collier and Sawyer.....	Cripple Creek.....	Gold

Forest Queen.....	Ironclad Hill.....	Lark Mining Company.....	604 First National Bank Building, Denver.....	Gold
Free Coinage.....	Bull Hill.....	{ Golden Conqueror Mines, Inc.....	Box 212, Manitou Springs.....	Gold
		{ C. B. Van Deman.....	Colorado Springs.....	Gold
Geneva and Mataoa.....	Gold Hill.....	{ Gold Bullion Mines Company.....	Cripple Creek.....	Gold
Globe Hill Shovel Operation (a).....		{ Joseph C. Twinem.....	Cripple Creek.....	Gold
Gold Bond (a).....	Gold Hill.....	Stratton Cripple Creek Mining and Development Company.....	Box 146, Cripple Creek.....	Gold
Gold Coin.....	Gold Hill.....	The Golden Swan Mining Company.....	812 Exchange National Bank Building, Colorado Springs.....	Gold
Gold Sovereign.....	Victor.....	W. D. Wade and Company.....	Victor.....	Gold
Gold and Little Johnnie.....	Bull Hill.....	F. G. Blackwood.....	Oklahoma City, Oklahoma.....	Gold
	Beacon Hill.....	Gold Empire, Incorporated.....	431 U. S. National Bank Building, Denver.....	Gold
Hiawatha.....	Beacon Hill.....	Nick Vendetti and Orville Faye.....	Cripple Creek.....	Gold
Hill Top 1 and 2, Lawrence Worden and Sarah Bell.....	Cripple Creek.....	The Tenderfoot Mining Company.....	1010 First National Bank Building, Denver.....	Gold
Hull City.....	Bull Hill.....	The United Gold Mines Company.....	Box 86, Colorado Springs.....	Gold
Ironclad (m).....	Bull Hill.....	Milton G. Young and Company Lease.....	321 East Bijou, Colorado Springs.....	Gold
Jack G.....	Gold Hill.....	Stanley Kolman.....	Cripple Creek.....	Gold
	Ironclad Hill.....	Thomas Kavanaugh and Richard Forest McConochie.....	Cripple Creek.....	Gold
	Raven Hill.....	Hodges.....	Cripple Creek.....	Gold
Jack Rabbit No. 3.....	Bull Hill.....	The Empire Lee Mining Company.....	Box 86, West Colorado Springs.....	Gold
Jerry Johnson.....	Ironclad Hill.....	The Jerry Johnson Gold Incorporated.....	521 U. S. National Bank Building, Denver.....	Gold
Joe Dandy (a).....	Raven Hill.....	Gold Producers Incorporated.....	522 U. S. National Bank Building, Denver.....	Gold
John A. Logan.....	Bull Hill.....	International Gold Producers, Incorporated.....	Box 383, Victor.....	Gold
Kozna and Meyers.....	Beacon Hill.....	Joseph Kozna and Leslie Meyers.....	Cripple Creek.....	Gold
Larson.....	Battle Mountain.....	Larson Brothers.....	Victor.....	Gold
Last Dollar.....	Bull Hill.....	The United Gold Mines Company.....	Box 86, Colorado Springs.....	Gold
Last Shaft.....	Bull Hill.....	Tennessee Mines Company.....	714 Equitable Building, Denver.....	Gold
Lee Shaft.....	Bull Hill.....	The Empire Lee Mining Company.....	Box 86, Colorado Springs.....	Gold
Lexington Dump.....	Cripple Creek.....	c/o F. D. Doeple, Agent.....	604 E. Fontanero Street, Colorado Springs, Colorado.....	Gold
Little May.....	Beacon Hill.....	Crider Bros, Lease.....	Cripple Creek.....	Gold
Longfellow.....	Bull Hill.....	Longfellow Mining Company.....	Box 353, Victor.....	Gold
Los Angeles (a).....	Cripple Creek.....	Tennessee Mines, Inc.....	714 Equitable Building, Denver.....	Gold
Lower Pueblo.....	Bull Hill.....	Neff Brothers and Louis Paul.....	Cripple Creek.....	Gold
McConochie.....	Battle Mountain.....	Longfellow Mining Company.....	33 State Street, Boston, Massachusetts.....	Gold

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

## OPERATING MINES IN TELLER COUNTY, 1939—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Mariposa (a)	Gold Hill	C. N. Pinkney	Acacia Hotel, Colorado Springs	Gold
Mary McKinney	Cripple Creek	Le Clair Consolidated Mines Co.	Box 136, Colorado Springs	Gold
Midget No. 2 (a)	Gold Hill	Nonpareil Mining Company, Inc.	543 East Sawyer, Cripple Creek	Gold
Molly Kathleen	Tenderfoot Hill	The Tenderfoot Mining Company	1010 First National Bank Building, Denver	Gold
Morning Star (a)	Bull Hill	Champion Mines Company	1824 Curtis Street, Denver	Gold
Murray Vein (a)	Gold Hill	Fons S. Chilson	Box 555, Victor	Gold
New Gold Dollar	Beacon Hill	The New Gold Dollar Mining Company	Box 86, Colorado Springs	Gold
New Kalamazoo	Bull Hill	Zeke Bennett, Chas. Walker, Jr., and Robert Joinson	Victor	Gold
Orpha May	Bull Hill	Orpha May Leasing Company	Box 434, Victor	Gold
Part of Electric (a)	Cripple Creek	Howard Owens	Cripple Creek	Gold
Part of Sacramento (a)	Cripple Creek	Patton, Patton and Patton	Cripple Creek	Gold
Patti Rosa	Bull Hill	Tennessee Mines Incorporated	714 Equitable Building, Denver	Gold
Pharmacist	Bull Hill	A. D. Pedrie and Roy C. Prinn	Victor	Gold
Pikes Peak (a)	Cripple Creek	H. C. Nelson and Associates	Victor	Gold
Portland and Last Dollar	Cripple Creek	The United Gold Mines Company	Box 86, Colorado Springs	Gold
Portland No. 1 and 2	Battle Mountain	The United Gold Mines Company	Box 86, Colorado Springs	Gold
Prince Albert	Cripple Creek	Frank Johannsmann	c/o J. R. Woodward, Agent, Idaho Springs	Gold
Princess E.	Raven Hill	William James and Richard Walters	Cripple Creek	Gold
Proper Claim, Blocks 99-100-1-6-7-8-9 and 117	Poverty Gulch	Alie Bell Mining and Milling Company	1010 University Building, Denver	Gold
Queen	Eclipse Gulch	Lark Mining Company	604 First National Bank Building, Denver	Gold
Queen Bess (a)	Cripple Creek	The Tenderfoot Mining Company	1010 First National Bank Building, Denver	Gold
Ramona (a)	Bull Hill	Dewey A. Collier and J. M. Hemby	Box 871, Electra, Texas	Gold
Raaler Lode	Cripple Creek	Isaac L. Golt, Jr.	55 South Euclid Avenue, Pasadena, California	Gold
Rose Nicol	Battle Mountain	The United Gold Mines Company	Box 86, Colorado Springs	Gold
Sangre de Cristo	Tenderfoot Hill	The Tenderfoot Mining Company	1010 First National Bank Building, Denver	Gold
Santa Rita	Victor	The Santa Rita Extension	412 Minnequa, Pueblo	Gold
Schisler Shaft (a)	Bull Hill	Schisler and Hartman	Victor	Gold
School Section	Bull Hill	Kyner Leasing Company	324 E. Bennett Avenue, Cripple Creek	Gold
Solomon	Ironclad Hill	Arizona California Exploration Company	28 Carlton Street, Cambridge, Massachusetts	Gold
Star of Bethlehem (a)	Bull Hill	Anderson, Pray and Anderson	Cripple Creek	Gold



Stratton's Independence.....	Battle Mountain.....	The Hemker and Nikkle Lease.....	Victor .....	Victor .....	Continental Oil Building, Denver .....	Gold
Strong (a) .....	Victor .....	Strong Leasing and Mining Company .....	326 .....	Continental Oil Building, Denver .....	Gold	
Swanson .....	Bull Hill.....	Glen L. Cox.....	.....	Lennon Park, Colorado Springs.....	Gold	
Tateman .....	Bull Hill.....	Lee Baker and Associates.....	.....	Victor .....	Gold	
Teutonic (a) .....	Ironclad Hill.....	Charles Hinricksen and Company .....	151½ .....	East Bennett Avenue, Cripple Creek.....	Gold	
Theresa Shaft.....	Bull Hill.....	The United Gold Mines Company .....	Box 86, Colorado Springs.....	Gold		
Unexpected .....	Bull Hill.....	J. E. West.....	.....	Cripple Creek.....	Gold	
United Gold.....	Cripple Creek.....	The United Gold Mines Company .....	Box 86, Colorado Springs.....	Gold		
Upper Granite.....	Battle Mountain.....	Aden E. Coleman.....	Victor .....	Box 86, Colorado Springs.....	Gold	
Victor .....	Bull Hill.....	Rollin C. Young.....	Insurance Building, Denver.....	U. S. National Bank Building, Denver.....	Gold	
Vindicator .....	Bull Hill.....	Gold Producers, Inc.....	203 .....	U. S. National Bank Building, Denver.....	Gold	
Vulcano (a) .....	Gold Hill.....	The United Gold Mines Company .....	Box 86, Colorado Springs.....	Gold		
Wedge .....	Raven Hill.....	James Clifford and Henry Hartman.....	Cripple Creek.....	Gold		
Wild Horse-Gleason.....	Bull Hill.....	Julia E. Leasing Company .....	Cripple Creek.....	Gold		
		Scholtz and Dwyer Lease.....	Cripple Creek.....	Gold		

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.

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Canon City ... Fremont.	Alnea	Silica Rock.	The Diamond Fire Brick Company	Box 107, Canon City
Canon City ... Fremont.	Burnito	Sandstone.	S. Vernon St. John.	Coaldale
Canon City ... Fremont.	Coaldale	Gypsum.	T. A. Gilray.	Coaldale
Canon City ... Fremont.	Coleman Oak Creek.	Granite.	V. D. Coleman and Company.	1025 W. Cedar, Colorado Springs
Canon City ... Fremont.	Fremont and Colo. Springs.	Coleman Indian Pink, Oak Creek and Blue Granite and Granite Monument Plant.	V. D. Coleman and Company.	1025 W. Cedar, Colorado Springs
Canon City ... Fremont.	Colorado Feldspar.	Feldspar.	The Colorado Feldspar Company.	1403 Trenton Trust Building, Trenton, New Jersey
Portland ... Fremont.	Colorado Portland Cement Plant and Quarry.	Limestone and Shale.	Ideal Cement Company.	Denver National Building, Denver
Canon City ... Fremont.	Current Creek.	Fire Clay.	H. J. Jewett, S. Vernon St. John and Associates.	Canon City
Canon City ... Fremont.	Deer Hill, Climax and Myra.	Fire Clay.	The Diamond Fire Brick Company.	Canon City
Canon City ... Fremont.	Diamond Fire Brick Plant and Flint Clay Mine.	Fire Brick and Tile.	The Diamond Fire Brick Company.	Canon City
Canon City ... Fremont.	Dolomite.	Dolomite.	The Colorado Fuel and Iron Corporation.	Continental Oil Building, Denver
Canon City ... Fremont.	Eight Mile Park School Section.	Feldspar and Mica.	The Colorado Feldspar Company.	1403 Trenton Trust Building, Trenton, New Jersey
Canon City ... Fremont.	Four Mile and Shaw Park.	Silica.	The Diamond Fire Brick Company.	Canon City
Canon City ... Fremont.	Gem Park Vermiculite.	Vermiculite.	Vermiculite Company of America.	410 Thorpe Building, Minneapolis, Minnesota
Canon City ... Fremont.	Hall Gypsum.	Gypsum.	Morton Dickson.	420 Greenwood Avenue, Canon City
Canon City ... Fremont.	Marble Quarries at English.	Marble.	Colonna and Company of Colorado Inc.	Box 387, Canon City
Canon City ... Fremont.	Mica Lode Claim.	Feldspar and Mica.	The Colorado Feldspar Company.	1403 Trenton Trust Building, Trenton, New Jersey
Canon City ... Fremont.	Pig Back Shale.	Shale.	The Diamond Fire Brick Company.	Canon City
Canon City ... Fremont.	Rogers.	Limestone.	George R. Rogers.	648 H Street, Salda

## OPERATING QUARRIES AND CLAY PITS, 1939

Town	County	Name	Product	Operator	Address
Las Animas	Bent	Bentonite	Bentonite	Clay Productions, Inc.	Box 469, Las Animas
Monarch	Chaffee	Monarch Lime	Limestone and Dolomite	Colorado Fuel and Iron Corporation	Pueblo
Salida	Chaffee	Salida Granite	Granite	Salida Granite Corporation	Salida
Salida	Chaffee	Warner Granite	Granite	James N. Warner	321 E. Fifth Street, Salida
Silver Cliff	Custer	Marjorie Lode	Vermiculite	T. M. Howells and C. Jennings	Silver Cliff (Querida Route)
Larkspur	Douglas	Brainerd Silica	Silica Sand	{ Helmer Brothers General Iron Works Company	R. 1, Box 94, Littleton 600 W. Bates Street, Denver
Castle Rock	Douglas	Castle Rock City Clay	Clay	A. C. Nikko	Castle Rock
Littleton	Douglas	Helmer Fire Clay	Fire Clay	T. L. Helmer	R. 1, Box 94, Littleton
Littleton	Douglas	Helmer Limestone	Limestone	T. L. Helmer	R. 1, Box 94, Littleton
Littleton	Douglas	Helmer Red Sand	Red Sand	Helmer Brothers	R. 1, Box 94, Littleton
Littleton	Douglas	Helmer White Sand	Silica Sand	Helmer Brothers	R. 1, Box 94, Littleton
Littleton	Douglas	Helmer White Sand No. 2	White Sand	Helmer Brothers	R. 1, Box 94, Littleton
Castle Rock	Douglas	Johnson Clay	Clay	H. G. Johnson	Castle Rock
Watertown	Douglas	Slocum Fire Clay	Fire Clay and Silica	Slocum Brothers	Route 1, Littleton
Sedalia	Douglas	Three Musketeers Feldspar Lode	Feldspar	The M. and S. Inc.	1333 West Maple, Denver
Manitou Springs	El Paso	Brown Lime Quarry and Lime Burning Plant	Limestone	The Thomas and Brown Lime Company	607 Thatcher Building, Pueblo
Manitou Springs	El Paso	Carr Tract Limestone	Limestone	The Thomas and Brown Lime Company	607 Thatcher Building, Pueblo
Manitou	El Paso	Garden City	Limestone	The Thomas and Brown Lime Company	607 Thatcher Building, Pueblo
Manitou	El Paso	Holly No. 1	Limestone	The Thomas and Brown Lime Company	607 Thatcher Building, Pueblo
Manitou Springs	El Paso	Holly No. 2 Limestone	Limestone	The Thomas and Brown Lime Company	607 Thatcher Building, Pueblo
Husted	El Paso	Husted Clay	Clay	Standard Fire Brick Company	Box 654, Pueblo
Colorado Springs	El Paso	Lennox Breed	Limestone	Holly Sugar Corporation	Colorado Springs
Manitou Springs	El Paso	Manitou Green Stone	Building Stone	N. L. Ross, Contractor	233 North Franklin St., Colorado Springs
Colorado Springs	El Paso	National Clay Products Plant	Shale	The National Clay Products Company	1224 E. Platte St., Colorado Springs

## OPERATING QUARRIES AND CLAY PITS, 1939—Continued

Town	County	Name	Product	Operator	Address
Texas Creek...	Fremont	Rose Pink Granite	Granite	Salida Granite Corporation	Salida
Canon City...	Fremont	Spikebuck Feldspar	Feldspar	M. and S. Inc.	1333 West Maple, Denver
Canon City...	Fremont	Swastika	Fire Clay	The Diamond Fire Brick Company	Canon City
Wellsville...	Fremont	Taylor Gulch	Limestone	Frank H. Norberg, Inc.	1007 U. S. National Bank Building, Denver
Canon City...	Fremont	Twin Peaks Travertine	Travertine	Colonna and Company of Colorado, Inc.	Box 387, Canon City
Canon City...	Fremont	Upper Beaver Valley Gypsum No. 2	Gypsum	{Ed Kerrigan I. J. Meyers}	Penrose
Texas Creek...	Fremont	Zingheim	Feldspar and Mica	E. E. Zingheim	Box 190, Orchard Avenue, Canon City
Glenwood Springs...	Garfield	Glenwood	Limestone	Holly Sugar Corporation	Colorado Springs
Sapinero...	Gunnison	Pifer	Feldspar	The Colorado Feldspar Company	1403 Trenton Trust Building, Trenton, New Jersey
Marble	Gunnison	Yule Marble Quarry and Plant	Marble	Yule Colorado Marble Company	Marble
2½ Mi. East of Vulcan Mine	Huerfano	Chamblin	Fire Clay	The Standard Fire Brick Company	Box 654, Pueblo
Golden	Jefferson	Coors Clay Mines and Porcelain Plant	Clay and Feldspar	Coors Porcelain Company	Golden
Golden and Denver	Jefferson	Crucible Clay Mine and Plant	Fire Clay	The Denver Fire Clay Company	Box 5510, Denver
Golden	Jefferson	Fire Clay—South	Fire Clay	Grant Parfet	Linder Block, Golden
Golden	Jefferson	Industrial School	Plastic Clay	Grant Parfet	Linder Block, Golden
Golden	Jefferson	Johnson Clay Mine	Fire Clay	The Denver Sewer Pipe and Clay Company	Box 2329, Denver
Golden	Jefferson	Lindsay Clay Mine	Clay	George W. Lindsay	1931 Forest Street, Denver
Golden	Jefferson	Moffit Clay and Wilson	Clay	The Denver Sewer Pipe and Clay Company	Box 2329, Denver
Golden	Jefferson	No. 10 Pit	Plastic Clay	Grant Parfet	Linder Block, Golden
Golden	Jefferson	Rockwell Clay	Plastic Clay	Jefferson Clay and Investment Company	Linder Block, Golden
Golden	Jefferson	Rubey Clay	Plastic Clay	The H. M. Rubey Clay Company	Linder Block, Golden
Laporte	Larimer	Alabaster Quarry and Plant	Alabaster	Alabaster Company of America	Livermore

Laporte.....	Larimer.....	Boettcher Cement Quarries and Mill.....	Shale and Limestone.....	Ideal Cement Company.....	Denver National Building, Denver
Laporte.....	Larimer.....	Clark Quarries.....	Limestone.....	Clark Quarries Inc.....	Box 503, Fort Collins
Laporte.....	Larimer.....	Gypsum.....	Gypsum.....	S. H. Roberts and Associates.....	Laporte
Belvue.....	Larimer.....	Josephson.....	Limestone.....	John and Victor Josephson.....	Belvue
Loveland.....	Larimer.....	Loveland Brick Plant and Clay Mine.....	Clay.....	The Denver Pressed Brick Company.....	West 16th and Clay Streets, Denver
Loveland.....	Larimer.....	U. S. Gypsum Quarries and Mill.....	Gypsum.....	United States Gypsum Company.....	300 West Adams Street, Chicago, Illinois
Trinidad.....	Las Animas..	Trinidad Brick and Tile Company.....	Shale, Brick, Tile.....	The Trinidad Brick and Tile Company.....	Trinidad
Capers Junction.....	Pueblo.....	Capers Junction Shale.....	Shale.....	The Standard Fire Brick Company.....	Box 654, Pueblo
Stone City.....	Pueblo.....	Nellie Helen.....	Fire Clay.....	Colorado Fire Clay Company.....	Stone City
Pueblo.....	Pueblo.....	Standard Fire Brick Plant.....	Tile, Fire Brick and Silica Brick.....	The Standard Fire Brick Company.....	Box 654, Pueblo
Stone City.....	Pueblo.....	Stevens Gypsum.....	Gypsum.....	The Thomas Coal and Lime Company.....	Ninth and Bradford, Pueblo
Stone City.....	Pueblo.....	Stone City Clay Mines and Kilns.....	Flint and Plastic Fire Clay.....	The Pueblo Clay Products Company.....	Ninth and Bradford, Pueblo
Pueblo.....	Pueblo.....	Summit Pressed Brick and Tile.....	Shale.....	The Summit Pressed Brick and Tile Company.....	Thirteenth and Erie, Pueblo
Capers Junction.....	Pueblo.....	Vulcan Clay.....	Fire Clay.....	The Standard Fire Brick Company.....	Box 654, Pueblo

## OPERATING MILLS AND SMELTERS, 1939

Character of Plant	Town	County	Operator	Address
Acme Mill.....	Jamestown.....	Boulder.....	Acme Mining and Milling Company.....	324 Cooper Building, Denver Box 37, Boulder
Larson Tungsten Custom Mill, Sugarloaf.....	Sugarloaf.....	Boulder.....	George H. Teal.....	Maximum Reduction Company, Box 470, Boulder
Maximum Mill.....	Sugarloaf.....	Boulder.....	Maximum Reduction Company.....	200 Nat'l Bank Bldg., Boulder
Mining Associates, Inc. Custom Mill.....	Boulder.....	Boulder.....	Mining Associates, Inc.....	Colorado Fluorspar Corp.....
Colorado Fluorspar Corporation Mill.....	Salida.....	Chaffee.....	Colorado Fluorspar Corp.....	Salida
C. H. Steiner Mill.....	Granite.....	Chaffee.....	C. H. Steiner.....	425 Con'l Oil Bldg., Denver
Ruth Custom Mill.....	Idaho Springs.....	Chaffee.....	The Ruth Company.....	Box 183, Canon City
Isle Barite Concentrator.....	Ilse.....	Custer.....	Colorado Barite Company.....	Silver Cliff
Stroehle Testing Mill.....	Silver Cliff.....	Custer.....	J. T. Stroehle and Associates.....	American Smelting and Refining Company.....
Arsenic and Cadmium Refinery.....	Denver.....	Denver.....	American Smelting and Refining Company.....	120 Broadway, New York City
Denver Smelting and Refining Company.....	Denver.....	Denver.....	L. A. C. Stafford and Associates.....	1277 S. Cherokee St., Denver
Colorado Concrete Tile Plant.....	Colorado Springs.....	El Paso.....	The Colo. Concrete Mfg. Company.....	208 Mining Exchange Building, Colorado Springs
Golden Cycle Plant.....	W. Colorado Springs.....	El Paso.....	The Golden Cycle Corporation.....	8th Floor Exchange Nat'l Bank Building, Colorado Springs
Mill Tailings Recovery Plant.....	Colorado Springs.....	El Paso.....	Mill Tailings Recovery Company.....	227 U. S. Nat'l Bank Bldg., Denver
Colonna Marble Grinding Plant.....	Canon City.....	Fremont.....	Colonna, and Company of Colorado, Inc.....	Box 387, Canon City
Colorado Feldspar Milling Plant.....	Canon City.....	Fremont.....	The Colorado Feldspar Company.....	1403 Trenton Trust Building, Trenton, New Jersey
Vermiculite Roasting Plant.....	Canon City.....	Fremont.....	Rocky Mountain Vermiculite Company.....	1225 12th Street, Denver
Boulder Ore Sampler Smelter.....	Blackhawk.....	Gilpin.....	Boulder Ore Sampler, Inc.....	1003 U. S. Nat'l Bank Bldg., Denver
Continental Mill.....	Central City.....	Gilpin.....	Continental Mining Company, Inc.....	Central City
Arkansas Valley Smelter.....	Leadville.....	Lake.....	American Smelting and Refining Company.....	120 Broadway, New York City
Cramer Mill.....	Leadville.....	Lake.....	George E. Cramer.....	140 Toledo Avenue, Leadville
Cramer Mill.....	Leadville.....	Lake.....	Leadville Cyanide Corp.....	1406 W. Lake Street, Minneapolis, Minnesota
Cramer Mill.....	Leadville.....	Lake.....	Ellis Webster and Associates.....	400 E. 4th St., Leadville
D and D Mill.....	Leadville.....	Lake.....	Harrison Dewar and Ike Brady.....	Leadville



Eureka Saturday Night.....	Independence Pass..Lake.	Eureka Saturday Night Min- ing Company.....	Twin Lakes
H. G. N. Mill.....	Leadville.....	H. G. N. Mining and Milling Company.....	Box 239, Longmont
Leadville Mill.....	Leadville.....	Brown and Erickson.....	514 E. 8th Street, Leadville
Venir Mill.....	Leadville.....	S. L. Harner and Associates..	Leadville
May Day Custom.....	Hesperus.....	May Day Milling Company.....	Durango
Gateway Alloys, Inc. Reduc- tion Plant.....	Gateway.....	Gateway Alloys, Inc.....	Pallsade
Creede Mills.....	Creede.....	Creede Mills, Inc.....	1024 Patterson Building, Den- ver
U. S. Vanadium Corp. Reduc- tion Plant.....	Uravan.....	U. S. Vanadium Corporation...30 E. 42nd Street, New York City	
G. A. Franz Mill.....	Ouray.....	G. A. Franz, Inc.....	Ouray
Mica Grinding Plant.....	Pueblo.....	Western Non-Metallies, Inc.....330 W. D. St., Pueblo	
Bonanza Smelter.....	Bonanza.....	Rawley Mining and Smelting Company .....	522 U. S. Nat'l Bank Bldg., Den- ver
Wilfley Mill.....	Kokomo.....	Wilfley Leasing Company.....	633 U. S. Nat'l Bank Bldg., Den- ver
Cameron Mill.....	Cameron.....	Cameron Gold Mines, Inc.....	512 Equitable Bldg., Denver

## OPERATING PLACERS AND DREDGES, 1939

Name	Town	County	Operator	Address
Brannan		Adams	United Sand and Gravel Company	c/o W. B. Kerkling, 1231 So. Gaylord, Denver
Giggey and Colby	Sugarloaf	Boulder	More Minerals Mining and Milling Company	c/o A. B. More, Wall Street via Boulder
Driscoll	Granite	Chaffee	F. H. Wolf and L. J. Hesser	Granite
Gold Basin, June and Emma	Granite	Chaffee	Savage Mining Company	c/o Len Savage, Granite
Gold Run (a)	Granite	Chaffee	R. F. Zacker	Granite
Independent	Granite	Chaffee	Frank D. Knowles	Granite
Raeanna (a)	Granite	Chaffee	Raeanna Mining Company	Granite (c)
	La Veta	Costilla	O. L. Drum	La Veta
Nevin Gulch (a)	Littleton	Douglas	Bert Cochran	3400 South Sherman, Englewood
Norguard Ranch	Edwards	Eagle	D. L. Atherley and Bartholomew	Edwards
Anna May	Blackhawk	Gilpin	Sylvester W. Blakeley	Blackhawk
Blake	Blackhawk	Gilpin	Harry E. Blake and Steve King	Blackhawk
Eugene Mines	Blackhawk	Gilpin	Eugene Mines, Inc.	910 First Building, Denver
Manion	Blackhawk	Gilpin	Manion Placer Mines	910 First National Bank Building, Denver
Mill Site No. 7	Blackhawk	Gilpin	F. J. Fleiss	Blackhawk
Pactolus	Pinecliffe	Gilpin	Cooley Gravel Company	Chillicothe, Missouri
Peerless	Blackhawk	Gilpin	Frank and Joe Fleiss	Blackhawk
Pleasant Valley (a)	Russell Gulch	Gilpin	Robert Dunfield and Robert James	Blackhawk
	Gunnison	Gunnison	D. J. Hollingshead	Gunnison
	Clear Creek	Jefferson	Tate Sand and Gravel Co.	Denver
Hallenbeck Dry Land Dredge	Leadville	Lake	Mt. Elbert Mining Corporation, c/o Frank K. Hall	Grand Junction
Oregon	Granite	Lake	Raeanna Mining Company	1133 Lake Avenue, Pueblo
Timberlake	Craig	Monte	Eldorado Gold Placer Mines	Baggs, Wyoming
Hardscrable	Uravan	Montrose	Hardscrable Placer Mines	Uravan
Finion Ground	Nucula	Montrose	Harry Pearson	Nucula
	Nucula	Montrose	A. E. Nordlund	Nucula
Red Canon	Montrose	Montrose	Montrose Recovery Company	511 Cooper Building, Denver
Alma	Alma	Park	C. L. and J. L. Stone	Alma
Beaver Creek	Fairplay	Park	Alplaco Mines, Inc.	Alma
Gumaer (a)	Alma	Park	Timberline Dredging Company	1716 California Street, Denver
			Placer Operating Company	938 U. S. National Bank Building, Denver
Hogg	Como	Park	Sterling Mining Company	Elustis, Nebraska
Logue (a)	Alma	Park	C. L. Logue and Associates	Alma
Pit (a)	Alma	Park	Jack Richards and Associates	Alma
Shelton	Fairplay	Park	W. A. Sheldon	Alma

Snelling (a).....	Alma.....	Park.....	Snelling Placer and Dev. Co....	Alma
Snowstorm .....	Fairplay .....	Park.....	Glen Frost, Wm. McKinley and Associates.....	Fairplay
Wilson and Chandler.....	Como.....	Park.....	Peerless Mining Company.....	Eustis, Nebraska
.....	Alma.....	Park.....	Butler and Healy.....	Fairplay
.....	Alma.....	Park.....	S. R. Phillips.....	Fairplay
.....	Fairplay.....	Park.....	R. L. and W. Company.....	Alma
.....	Fairplay.....	Park.....	Miles O. Deatherage.....	Fairplay
.....	Fairplay.....	Park.....	Gow, Walby and Burton.....	Fairplay
.....	Fairplay.....	Park.....	John House.....	Fairplay
.....	Fairplay.....	Park.....	T. E. Jackson.....	Fairplay
Gold Run (a).....	Telluride.....	Park.....	E. E. Lytle.....	Fairplay
St. James (a).....	Telluride.....	San Miguel.....	J. Walters, Jr.....	Telluride
Beaver Head.....	Breckenridge.....	Summit.....	J. M. Keffer.....	Telluride
Bemrose (a).....	Breckenridge.....	Summit.....	Mrs. Hazel Riggle.....	220 Eliot Street, Denver
Long Island (a).....	Breckenridge.....	Summit.....	F. B. Marble.....	Breckenridge
Louis D.....	Breckenridge.....	Summit.....	Chris George and Associates.....	Breckenridge
Placer on Blue River.....	Breckenridge.....	Summit.....	M. L. Millet.....	Alma
Tiger Placer Dredge (a).....	Breckenridge.....	Summit.....	Walter Graves.....	Breckenridge
Washington (a).....	Breckenridge.....	Summit.....	Blue River Company.....	Breckenridge
.....	Breckenridge.....	Summit.....	Charles Anderson and Associ- ates.....	Breckenridge
.....	Breckenridge.....	Summit.....	Alex Mathiesen.....	Breckenridge

(a) Operated for part of the year only. (c) No production reported in 1939. (m) Mill operated in connection with mine.













